

SUPPLEMENT.

The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

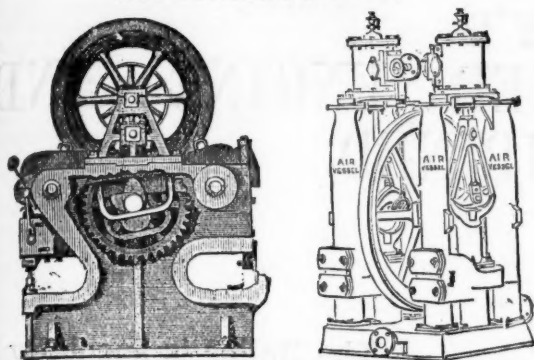
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LONDON, SATURDAY, FEBRUARY 6, 1875.

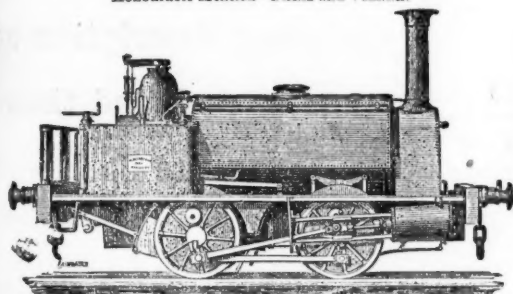
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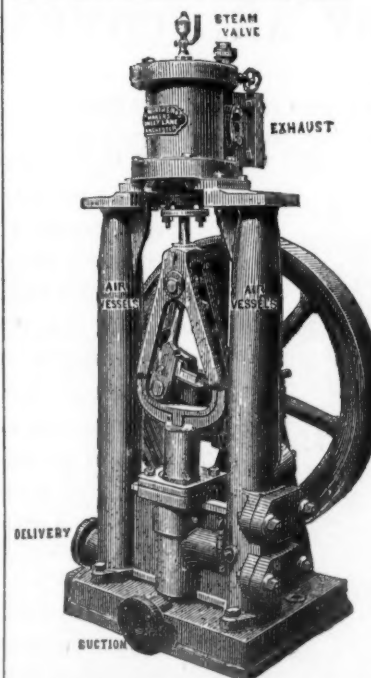
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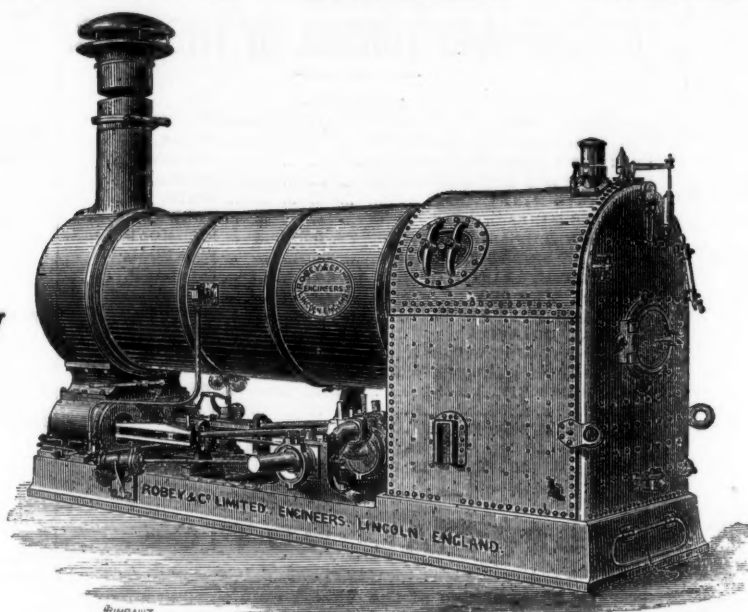
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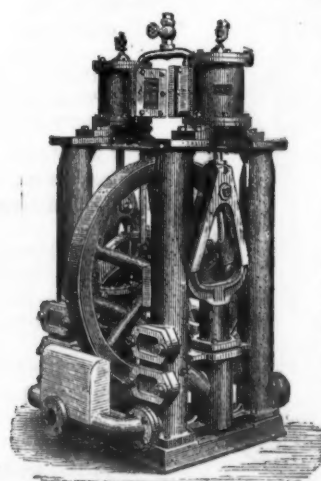
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Original Correspondence.

EXAMINATION OF THE "CONSOLIDATED VIRGINIA" AND "CALIFORNIA" SILVER MINES BY THE CALIFORNIA MINING BUREAU.

SIR.—In answer to many enquiries published lately by the *Mining Journal*, asking me information in regard to the present standing of the London and Pacific Coast Land and Mining Bureau, I beg to state that it has been reorganised and incorporated under the laws of California, and that some of the best men of that State compose the board of directors. The reports made since the last four years upon certain mines which were considered by the undersigned either as worthless, or having been placed upon the London financial market at the most unreasonable prices, so as to render payment of dividends an impossibility, have dissatisfied the originators of these schemes on this side, and have induced them to unite in a body of calumniators against the Mining Bureau and its President, in order to destroy an institution which is an obstacle to their unscrupulous designs. Their systematic opposition has been a source of strength for us, while it has brought to light the many services rendered to the English capitalists by having prevented investment in mining enterprises which have been since demonstrated as being of the most fraudulent character. It should not be forgotten that the great Diamond Swindle was exposed from the beginning by the undersigned, and that without his timely admonitions through the columns of the *Times*, the *Mining Journal*, and the *Journal des Debats*, in Paris, the financial markets of Europe would have been overflooded with the stock of several of those fraudulent diamond companies. The English public is the best judge of my untiring exertions since four years ago for the protection of their interests. Unless full confidence be placed in my reports I will always be exposed to be accused of having been bribed in case they are favourable, and of having been guilty of black mail in case they are not. Such is the dangerous position of the Bureau. But I will affirm upon my conscience that my aim has been honest, and I challenge anybody to prove by facts, except he be a perjurer or a man who has suffered from unfavourable reports, that I have ever received any money consideration which was not honestly and openly earned in consideration of my services in examining and reporting upon mining properties.

In regard to the few favourable reports which I have made upon properties now in the hands of English capitalists, I should say that I have recommended these properties, but my responsibility cannot extend to the exorbitant prices which have been paid for them. Let unsatisfied shareholders communicate with me, and I will gladly furnish them with any explanation they may require.

Finally, *noblesse oblige*, and I will, therefore, firmly stand as before in the line of duty, by keeping the Mining Bureau as the necessary protector of both the legitimate mining interests of this Coast and the English capitalists seeking a safe and profitable investment in the soundest enterprises.

To those who may still entertain any doubt in regard to the standing of the Bureau I submit the following, which speaks for itself:—At a meeting of the board of directors of the London and Pacific Coast Land and Mining Bureau, held in the City of Sacramento, on Jan. 7, President Col. J. Berton presiding; present—J. Berton, T. B. McFarland, United States Land Registrar; Gen. L. H. Foote, Adjutant-General of California; Edward Cadwalader, land and insurance agent; and A. Leonard, secretary, a full board, the following was unanimously adopted:—

"Whereas foreign capitalists and the principal interested parties in the undermentioned mines, located in Nevada, have expressed a desire that the European press and public be enlightened by the Mining Bureau upon the real merits of these properties, therefore be it resolved that Col. Berton, President of the Bureau, be authorised to examine in its behalf the mines of Consolidated Virginia and California Mining Companies, and submit his report thereon."

By order of the board, A. LEONARD, Secretary.

In pursuance of the above authority I have, in company of Mr. John W. Mackay, the fortunate holder of 40,000 shares in the above companies, and the original principal owner of the two mines, thoroughly examined the Consolidated Virginia and California; which, judging by the high prices reached by their stock on the San Francisco Exchange, may be considered as the greatest mines in the world. As soon as my reports have been submitted to and approved by the board of directors of the Bureau they will be forwarded to the *Mining Journal* and other leading papers in London and Paris.

J. BERTON,
President of the London and Pacific Coast Land and Mining Bureau.
Virginia City, Nevada, Jan. 12.

ROCK DRILLS.

SIR.—There has been a good deal of correspondence lately in the *Mining Journal* about these machines, yet I would ask for space to offer a few remarks respecting the application of the drills to colliery shafts. There are very many coal estates being opened out at the present time, and in the majority of these the work of sinking is done by hand; and where the strata are composed of harder substances than mere clay the rate of progress can readily be imagined as slow in the extreme. Not only are the hopes of the proprietors falsified to a great extent, but the expense consequent on the tedious method of sinking is enormous.

Several rock drills have been introduced of late years, and with varying results. Some are worked by hand, and others by both steam and compressed air. The latter method is the more convenient when the work is at a great depth, as steam through condensing is found to lose much of its force on its passage from the surface to the bottom. The finest rock-drill now before the public can be worked by compressed air at any depth at the rate of about 1000 blows per minute, and besides cutting through several yards of the hardest rock per day with the least appreciable wear and tear of the steel borers, serves as a most valuable ventilating agent, for the air being compressed to the extent of five atmospheres in one expands on passing through the drill into its ordinary volume. An impartial observer cannot help feeling the keenest pity for the prejudice and astonishing conservatism of many capitalists who, by their blindness to their own interests, are wasting thousands in persisting to keep to the antiquated method of sinking by hand. There are some magnificent properties, especially in South Wales, now being developed, and if the owners of these would only give the McKean drill a fair and just trial they would soon find that the results gained had far surpassed their most sanguine expectations. But, alas! no powers will move Welshmen. — A CONSTANT READER.

ROCK DRILLING MACHINERY—THE CHANNEL TUNNEL.

SIR.—There being now reasonable probability of the Channel Tunnel being commenced, it may be well worth while to consider what kind of machinery is likely to prove most economical in making it. The various forms of rock drills used in the Mont Cenis, Hoosac, Sutor, and other great tunnels would be totally inapplicable to the purpose, for the same reason that it would not be economic to use a steam hammer to crack eggs, neither the Diamond drill, the Burrell, the McKean, or any other drills of the class adapted for dealing with hard rocks having been found economic when anything softer than sound slate has to be passed through; the "mechanical cheese-cutter," however, appears to be going to the other extreme. The model works very well, no doubt, but it will be found a different matter altogether if we attempt to move 100,000,000 cubic feet of material by the same means. The disadvantage of all machines in which pressure alone is relied upon—and both the Diamond drill and the "mechanical cheese-cutter" would come within this category—is that irregularity of hardness in the rock has a most prejudicial effect upon the progress of the drivage. The admixture of chalk with boulders is a most uncomfortable one for these machines, as the boulders are not fixed firmly enough to let the machine cut through them, as the Diamond drill could do, whilst they are too tight to be knocked out by either the Diamond drill or the cheese-cutter, so that the chalk is protected until the boulder is literally shaken out of place, and in the latter case it would probably fall into the machine, and injure it.

It seems to me that the only form of machine likely to give good

results is the coal-cutter, especially the pick machines, and if these were used the debris could be much more easily removed, and as the extent of ground to be removed by mere abrasion would be reduced to an infinitesimal proportion, the inconvenience which would arise from obstructions in the shape of boulders would be much reduced. With pick machines all that would be necessary is to make a vertical cut on each side of the intended advance tunnel, and one under-cut, when the mass could be quickly blown down. Assuming the advance heading to be 8 ft. by 8 ft., the progress ought to be very rapid. Any of the best pick machines could under-cut in chalk to the depth of 4 ft. in about 30 minutes for the two 8 ft. vertical and the one 8 ft. under-cut, and as a row of holes could be put in along the top whilst the cutters were at work, so that the charge might be fired in one hour after the machines were got to work; it would take half an hour to clear the debris, and half an hour to get all ready for the next length of drivage, which would give 48 ft. progress per 24 hours; this could be made at each end, so that the daily progress would be 16 fms. per day, or one mile would be got forward in 55 days. Allowing for Sundays, stoppages, and hindrances, it might safely be calculated that 275 days' work would be done in the 365 days. The masonry work and rail laying, including the enlargement of the tunnel to full size, could readily be kept up to the advancement (that is to say, at the rate of 5 miles per annum), so that the whole tunnel might be ready for opening for traffic in 4½ years. Many would be prepared to undertake the drivage at 2½ per cubic fathom, and as there are 3,000,000 cubic fathoms of material, not calculating the approaches, the cost ought not to exceed 6,000,000. This would leave 4,000,000. for the approaches and for the fixed charges, and still the whole would come within the 10,000,000. mentioned in last week's *Journal*, so that only 10,000. per week profit would be required to give the shareholders 5 per cent. upon their investment. Surely this might be obtained. ENGINEER.

Feb. 2.

SUBMARINE RAILWAY BETWEEN ENGLAND AND FRANCE.

SIR.—It is now nearly 30 years since a description of my invention for connecting England and France by means of a submarine railway was published in the *Mining Journal*. The most eminent of the eminent engineers of the day wrote on it the word "impossible," and jubilant with the idea that his veto was sufficient to prevent a scheme which had not originated with himself from being adopted so long as he lived, he, with equally disinterested motives, went to Egypt, and walked over the spot on which a company had the unpardonable presumption to propose cutting a ship canal without having appointed him engineer-in-chief. It was well that his bones rested in Westminster Abbey before the completion of that stupendous work. His stereotyped "impossible" frightened English capitalists, but the works proceeded rapidly under the auspices of the French Government. During several years following 1844 I matured the invention, publishing a great number of papers on the details, which, if collected, would form a volume, but I was met everywhere with the laconic sentence, "Mr. Stephenson has condemned your scheme as impossible." "True," I replied, "and one fool make many; but I can wait."

If, however, only a small number of persons believed that France and England would be united by means of an iron road, there were several individuals on both sides of the Channel who took upon themselves subsequently to publish plans as their own invention which differed from mine only in some unimportant details. These, however, were outdone in impudence by a person named Chalmers, who a dozen years ago published, in the form of a pamphlet, some details on the Channel railway, nearly the whole of which, with the exception of the ventilator in mid-Channel, had been copied word for word from my published papers, and he evidently imagined that he could easily appropriate my invention if he could succeed in ridiculing my style of writing. In one of my papers I had alluded to the lowering of each section of the proposed tube on the bed of the sea; by a typographical error the term lowering was rendered throwing, and, chuckling over the word, Mr. Chalmers thought that, in the eyes of the public, that would justify his putting my invention in his pocket. The jackdaw thought that he could pass for the eagle by stealing one of his feathers.

This invention was first published in March, 1844, and then it was only after it had existed in my brain for several years. Attempts were subsequently made by other parties to claim a priority of invention; but no periodical or publication of any kind printed before that date was ever produced containing the words "submarine railway" or iron railway tunnels "crossing rivers and narrow seas." I, therefore, conclude that I am justified in claiming the idea as mine. I may add that from the time the thought flashed across my brain it has been an ever-present idea. I have never lost confidence in its ultimate realisation.

I foresaw from the first that, owing to the novelty of the idea and the stupendous character of the scheme, many years might elapse before it would be seriously entertained, and I was not mistaken. And then a native of a small islet in the English Channel, unknown as an eminent engineer, and with no claim except his inventions, might hide his diminished head, but the climax of my shortcomings was exhibited in an almost tragical occurrence. When, in 1845, my invention was published in England, I was told that mine was only a modification of George Stephenson's plan for crossing the Menai Straits. I had then no alternative left but to explain that in 1844 a lengthy description of my plans, with numerous drawings, had been confidentially placed in the hands of the eminent engineer, through the medium of Sir Joshua Walsley, subsequently member for Leicester. The papers and drawings were never returned. The eminent engineer had a whole army of friends, who decided that rightly or wrongly—no matter if it should be the latter—he must be upheld. Under their protection he proclaimed to the world that six or seven years ago he had proposed to construct an iron tube across the Menai Straits, but that he had been met with "looks of scepticism on all sides." Who, or rather what, were these sides he did not indicate, but if not deaf the "sides" were certainly dumb, for no report of this pretended invention was given to the public before 1845. My explanation, however, aroused his ire, and, taking advantage of his influence as an eminent engineer, he lost no opportunity of condemning my invention for joining England with the Continent by means of a submarine railway. He had his revenge, but as he now sleeps I will only say *requiescat in pace*.

Thirty years have passed away, and the present generation of eminent engineers have so far rubbed their eyes as to admit the possibility of constructing a dry road across the Channel, but are evidently aghast at the idea of attempting what one of your City contemporaries has termed an "untried novelty." They cannot go beyond the quasi-antediluvian plan of boring at a great depth beneath the waters of the Channel. Some 20 years ago your well-known correspondent Mr. W. Austin, C.E., proposed a plan of boring which at the time appeared to me the most feasible should boring be persisted in. He proposed to bore near each shore to a sufficient depth to allow the tunnel itself to be constructed with the fall from mid-Channel. The great advantage of this plan is that should any water find its way into the workings it would flow towards the main shafts, from whence it could be pumped out. I am very much mistaken if this plan is not adopted by the eminent engineers who have obtained a temporary concession from the French Government. Whether they will acknowledge the claims of the inventor is more than doubtful. It is not every engineer who thinks that he can afford to keep a conscience. Many think that it is too costly.

Singularly enough, however, Mr. Austin has abandoned his original plan, and he now proposes that the deepest part of the tunnel should be in mid-Channel, and it must be admitted that he gives very strong reasons for the change. The gradients would be infinitely more favourable, and would be uniform from each entrance to mid-Channel. The only question which here arises—and it is one of vital importance—is, What is the nature of the strata beneath the waters of the Channel? If perfectly dry the second plan of Mr. Austin can be safely adopted, but one of your contemporaries has recently expressed an opinion that the chalk is as full of water as a sponge, and it is well known that wells sunk deep in chalk furnish several towns with an inexhaustible supply of pure water.

The grey chalk, at a greater depth, is probably more tough and more impervious, and could the hard rock beneath be reached it would be better still. Some engineers have imagined that it would be possible to commence boring the tunnel as soon as 400 ft. in depth would be reached, but even at this moderate depth tunnels each five miles in length would be required as approaches, giving a tolerably heavy gradient, so that even under the most favourable conditions the tunnel cannot be less than 30 miles in length. It is to be hoped, therefore, that a depth of 2000 ft. will not have to be reached, as some have supposed, before finding a dry soil, as under such circumstances the tunnel would be some 60 miles in length.

It is evident that the time has not arrived for attempting such an untried novelty as the construction of a submarine railway by means of a tubular iron tunnel sunk on the bed of the Channel. This would frighten our most eminent engineers. They understand, as their fathers before them understood, the boring of the soil, consequently this, and this only, must be attempted. Let them go on by all means, and whether they succeed or not a submarine iron tube will be eventually sunk in the Channel; but the world may have to wait for the eminent engineers of the next century. Some of these are, probably, already so far weaned as to be entrusted with the feed-bottle, and while these young hopefuls are cutting their teeth the world will be getting familiar with the stupendous scheme, and may eventually cease to loose breath on hearing of an "untried novelty" in marine engineering. According to an old proverb "Little things are great to little minds," but the late Archbishop Whately uttered a still more profound truth when he said "To little minds great things appear little."

I had entered into some details on the Calais and Dover Submarine Railway, but I have already brought this paper to too great a length to offer other remarks for the present. I may shortly resume my pen.—*Jersey, Jan. 28.* JOHN DE LA HAYE.

LAND AND WATER CARRIAGE—THE CHANNEL TUNNEL.

SIR.—In the article upon the projected Anglo-French Tunnel in the Supplement to last week's *Mining Journal* it is estimated that unless a traffic amounting to 1,200,000. per annum could be ensured there would be no funds available for dividends, so that it is only the receipts above that amount that would be applicable to the payment of interest upon the 10,000,000. capital; if the traffic receipts, therefore, were 1,500,000. per annum, there would be but 3 per cent. for dividend, and the question is where is this traffic to come from? The goods traffic certainly would not be greater than it is at present, for owing to the enormous difference of cost between land and water carriage the former is never resorted to except in cases of absolute necessity. To take a favourable example for the advocates of land carriage, let it be supposed that a ton of metal castings has to be transported from Glasgow to Paris, the cost by railway, at only 3d. per ton per mile, which is much less than would really be charged, would be—Glasgow to Dover, 490; Dover to Calais, 20; Calais to Paris, 300=810 miles at 3d. per mile, or 24.10s. 7½d.; whilst to carry the same by water there would be for freight from Glasgow to Rouen 12s. 6d., and 90 miles railway carriage from Rouen to Paris 5s. 7½d., making 18s. 1½d. in all, the saving being 17. 12s. 6d. upon every ton sent. As light perishable goods are now sent between the two coasts at rates and with a delay not exceeding a few hours under the most adverse circumstances, the Tunnel Company could not charge much higher rates than those now paid, and the total receipts from goods traffic would not amount to the cost of draining and ventilating the tunnel.

It is to the passenger traffic, then, that the company would have to look for profit, and assuming 500 to be induced to pass through the tunnel during the year where only one person now crosses by the boats, the profit would be infinitesimal, so that another estimate has been made. The various railway companies which provide for the London suburban traffic carry their season ticket-holders at the average rate of 17. per mile per annum, and it has been calculated that if the whole of the men of business residing in the suburbs and brought to London daily were to remove to Calais, and take season tickets through the tunnel at 20. per annum each, not more than 2½ per cent. per annum could be paid as dividend to a Channel tunnel company, assuming the whole work to have been completed for so low a sum as 10,000,000. Until Calais, then, be recognised as a suburb of London, the prospect of such an enterprise becoming commercially remunerative appears to be exceedingly cloudy.

Feb. 4.

ENGINEER.

PROFITS OF CORNISH MINES.

SIR.—The enquiry made in last week's *Journal* by your correspondent, "Reader," as to the amount of dividends paid by certain Cornish mining companies is one of such general interest that I send you herewith some information which I have been able to collect as to the profits which have been earned by mining in Cornwall and the adjoining county. In Gwennap alone dividends exceeding 3,000,000. were returned, upon an outlay of less than 200,000., and the immense richness of Wheal Seton, West Wheal Seton, the Roskars, the Bassets, and Wheal Buller have become proverbial, and taking the mines to the westward the results achieved have been not less satisfactory. West Caradon, upon an outlay of 50000., paid 75,000. dividends; the United Mines, upon 16,000. capital, returned very nearly 500,000.; Tresavean, with only 3120., earned 444,422.; and South Caradon divided 365,056., upon a capital of 6400. East Wheal Rose, again, returned 287,360., upon 6400. capital; and Dolcoath gave 447,719., on an outlay of 46,194. The original capital at North Roskear was but 7400., yet the dividends paid were 102,000.; and the results obtained at Par Consols were still more favourable, since the shareholders subscribed but 7200., and received 176,000. in dividends. At Fowey Consols the return was tenfold, an original subscription of 20,480. having been repaid by dividends amounting to 209,313. Cook's Kitchen, with 10,000. capital, earned 300,000. for the fortunate shareholders; and East Crofty, where the outlay was 11,750., returned 78,960. in dividends. The success of Capt. William Teague at Carn Brea has frequently been referred to in the *Mining Journal*, and the payment at that mine of 260,000. in dividends, upon a capital of 15,000., affords very substantial evidence of what may be done by energy and perseverance. St. Ives Consols, with only 7520. original capital, earned 90,000. Botallack has returned the amount expended upon it five times over, less than 20,000. capital having returned 100,000. in dividends; and Levant, upon an outlay of only a few thousands, returned 170,000. in dividends. Large profits were earned at Great Alfred and Alfred Consols, the dividends paid amounting to 300,000. and 100,000. respectively, but the amount of the original outlay I am unable to give, although I have no hesitation in stating that it bore but a very small proportion to the dividends. In Devonshire, Wheal Friendship earned, with a capital of 6400., no less than 304,064. in dividends; and Devon Great Consols, with little more than 1000. of original capital, earned considerably over 1,000,000. Devonshire has now lost these mines from the Dividend List it is true, but there is every reason to believe that both will be again known as permanent dividend-paying concerns at no distant date, and add still more to the reputation of the profitable character of British mining.

Now, as the area covered by these mines is extremely small, as compared with the mineral regions in which they are situated, and as it cannot be supposed that all the wealth of the lodes has been concentrated in particular spots, such spots happening to be those already worked, it appears only reasonable to conclude that, with the same amount of energy and perseverance as was displayed by the miners of old, Cornwall and Devon are capable of yielding as large profits in the future as they have in the past. But there is one important fact which must not be forgotten. All the mines which have earned these large profits have been put upon the market unsaddled with heavy amounts of purchase-money—the actual cost of the machinery, and the amount really paid out of pocket for miners' wages being all, with the solicitors' fees for drawing up the conveyance, that the adventurers have paid. Thus, in the case of South Caradon 6400. sufficed for making all the necessary purchases, and providing the requisite working capital, and as all had a real interest in the successful development of the property the concern was economically brought into profits, and has always continued so. Upon the present system of forming companies the results might

have been quite different, as the public would have been charged a heavy premium for the transfer of the lease, and an almost indefinite number of free shares would have been put in circulation. The £400, would have been absorbed in getting the shares quoted on the market and the premium for transfer, which, in addition to the £400, would have been procured from the public (in a recent case the public were charged 24,000*l.* for what cost the original vendor 240*l.*, and the same premium is not unusual), the natural consequence being that the shareholders quickly find themselves in the winding-up courts, the mine, although a good one, being abandoned as worthless, to the obvious disadvantage of the lords and the adventurers, though to the profit of the vendors and middle-men. The number of companies formed within the past seven years which now occupy a place in the Dividend List is insignificant: in fact, it is difficult to find one, unless those be included where the dividends have been paid out of capital, but this does not arise from the poverty of the mines, or the unfavourable prices of minerals, the fact being entirely attributable to the mode of forming the companies, and the manner in which the officials of the companies act in trading upon the forming, winding-up, resuscitation, re-forming, and otherwise manipulating of the companies, instead of developing the mines. Let all the money subscribed be applied to working the mines, and Cornish mining will prove as profitable as ever.

Feb. 2.

THE WATER QUESTION—SURFACE DRAINAGE.

SIR,—Whilst writers are contending with, perhaps, more vigour than discretion, and endeavouring to hit upon the precise causes of failure in mining—are wrangling, are twisting truths, and disfiguring facts—whilst some advocate new treatments of minerals, and others, possessing equal confidence, argue against them, permit us to offer a few remarks on this subject—surface drainage. Were any excuse for these suggestions needed we could point to paragraphs in the Journal notifying the startling news that one mine contains 130 fms. of water, another 100, and so on; but no one, we are sure, will deny the paramount importance of the water question. Perhaps the floods during this, or rather we hope the past, winter have never been equalled, certainly not of late years, and the natural and inevitable result of all this rain has been the flooding of many mines. In the great central mining district of Cornwall—the district about Redruth and Camborne—hardly a single one of the northern mines is working. Great South Tolgus and Wheal Tehidy are both stopped, and the overplus of their water passes on to East Pool and Wheal Agar on the west—probably to Wheal Uny on the south—and a little of it finds its way to Carn Brea on the south-west. Further west, North Crofty, North Roskear, and Wheal Seton are full of water, which burthens and well nigh crushes West Seton. Thus we see ruin to one mine means danger to many.

The water from these mines must find its way primarily from the clouds, thence to the earth, to the cross-courses, and so on to the lodes. Could this water be intercepted in its course to the lodes a great deal of the burden would be taken off the engines, and a great deal of cost saved. We are convinced that a thorough system of surface drainage would render many mines quite dry and free from water, sending it down the rivers harmless or useful, instead of being, as before, a power of destruction. Could not such a system be carried out at a comparatively small cost—compared, we mean, with the immense cost of supporting engines going at full speed, racking the machinery, and perhaps breaking it? The land would cost nothing; the material and labour would be the only expense, and a benefit to future generations would be conferred.

If anyone is convinced of any serious insurmountable objection to such a system let him state it. We claim for the matter a share of public attention.

N. B.

COMMITTEES IGNORANT OF MINING.

SIR,—The miner, and he alone, can form a true estimate of the miner's work, and it is as absurd to place a merchant to superintend mining as a tailor to supervise a foundry. To what class do mining committees belong? Each of the professions furnish their quota, and every occupation contributes its share, and we think they are not doing more than justice to themselves to thoroughly investigate and enquire fully about the revenues and incomes as they speculate and invest their money in our mines, but of that branch directly connected with the miner they know little, if anything, and the manager should be allowed entire control compatible with proper development and economy. In very many mines these boards are mere nonentities as they acquiesce to the manager's proposal, whilst the others the superintendent cannot use the discretion that he would as evidenced by the following example communicated to me not long since by one who was officially connected with the mine. The mine was managed by a committee of five, and the manager was the only miner; on the morning preparatory to the survey the committee would meet on the mine and go through the books, and if any parties had earned more than the usual pay the prices which the agents marked were reduced, and the consequence was not half work performed. He added—"that is the best mine in the county if worked without a committee." We do not say a word against oligarchies, provided they fully understand the business in hand, but as my aim is to point out the hindrances to successful mining as coming under my own observation, we let others apply the remedy.

"Ex Nihilo Nihil Fit." I am slowly recovering from the paralytic stroke occasioned by a casual glance at the article whilst reading the *Mining Journal* this morning, and hope as time flies the benumbing and deadening influence of that letter on unfortunate me will also pass; then, and not till then, shall I be adequate to the task of replying.

Gwinear, Feb. 2.

EDWARD SKEWIS.

SUCCESSFUL AND UNSUCCESSFUL MINING.

SIR,—To think those mighty orbs, "Ex Nihilo Nihil Fit" and "Cornishman" should leave their Himalayan pedestals, and condescend to look upon a little "puerile" Beacon light, astonishes one, and makes him exclaim with the Irishman when he heard the report of a cannon, "Oh! I'm kilt, I'm kilt," but, after all, it is more smoke than fire. I must confess I am rather paralysed, but better be frightened than killed. "Ex Nihilo Nihil Fit," allow me to tell you I envy no man his position in life, especially mine agents. I get my living after them, which occupation I prefer to an agency. I did not say a man was inefficient as an agent because ignorant of the component parts of blende, but do maintain it would be better qualify him as an agent to know it. If you dissent from the statements I have made, name the differences, so that the mining public may be benefited thereby. "A sore horse cannot be combed," consequently he kicks. I consider your letter a conglomerate of baseless assertions; "from nothing, nothing comes." "Cornishman" says, "without attempting to refute anything he scatters all my assumptions and conclusions to the winds, by declaring in a few forcible sentences that the great secret lies in these three magic words—unqualified mine agents." Will "Cornishman" oblige by answering two questions—1. Who is the cause of too low-class ores being sent to stamps?—2. Who is to blame when agents are not energetic enough underground? As well as I can remember, the other inference drawn by "Cornishman" is mines being worked without the slightest hope of success. Now, I assert without the slightest fear of contradiction that not a mine in the county has been started without some kindly prospect in view. I admit many mines have not been developed as they should have been, owing to the agent (unqualified) squandering the money for unnecessary purposes. I know a mine where 35,000*l.* has been literally thrown away in like manner, without reaching the bottom of the shaft. The resident agent might have been seen going about the mine with a pair of yellow kids on his delicate hands, or like Sir R. C. D. T. in his "palace," puffing his cigar and quaffing his luxurious beverages. He had 35,000*l.* to spend, and, like the fast young gentleman, thought he would enjoy himself with the good things while it lasted. Those insinuations may again suit "Ex Nihilo Nihil Fit." If he would only give his name we might be able to say something more. No Englishman should be ashamed to show his colours; but perhaps he has fallen, his yellow kids exchanged for a nice red (slime) colour, and poor fellow he can only bark under a *nom de plume*. It appears to me that "Cornishman" writes for pastime. He agrees, to a cer-

tain extent, with all the views that are advanced, and then in mild but striking language treats of the superfluous matter; but I think he must be convinced that unqualified agents are the source of failure in the three causes set forth by him in his previous letter.

Beacon, Camborne, Feb. 2.

THOMAS H. ALLEN.

EXTRACTING METALS FROM THEIR ORES.

SIR,—Mr. Thomas Clark, M.D., and Mr. Edward Smith, F.C.S., it appears, are in possession of a patent, shortly to be sealed, for, I suppose, some improvements in this very useful pursuit. In addition to which there is the Nascent copper process, and there are some other improved, or said to be improved, processes. But in all these the ores have to be mined first, in a very slow, expensive, and unsatisfactory manner, which involves immense labour, great danger, and not seldom much loss of capital. Now, I would propose that we change all this. That all our metallic minerals have been at some time held in solution there can be no doubt. Many are held in solution in the earth now, and in very considerable quantities. That these solutions can be attracted to the surface through a proper arrangement of existing natural laws I am perfectly satisfied. More, those minerals we require, not now in solution, can be reduced into solution, and also attracted to the surface in the same manner. This may be done without mining at all, and by the natural laws placed under our control. I have entered upon a series of experiments with regard to this, and have already succeeded to an extent which at first would have appeared miraculous, but which now appears the small beginning of a grand discovery, the evolution of which shall change the whole mode of pursuit in the production and preparation of the metals. I bring this forward in your columns that other men's minds may be directed to the same object, being fully convinced that the day is not far distant when we shall stand on the surface and command the metals from "the vasty deep."

METALLURGIST.

MINING IN SHROPSHIRE—THE WOTHERTON MINE.

SIR,—For some weeks past we have had our attention drawn to the Chirbury and Montgomery district by the stir being made about a certain traction-engine drawing the barytes raised from the Wotherton Mine, near Moston, Chirbury, Salop. Many people even in this county had no idea of such a mine being in existence, yet in a letter in the *Shrewsbury Chronicle* of Friday last it is stated that it will take from 15 to 20 horses daily to draw the present get of the mine, with increasing demand. Parties are surprised to hear of such a mine, with a vein of sulphate of barytes producing from 60 to 70 tons per fathom. The agent told me that the depth from surface, 80 yards, and 80 yards long, had produced the enormous quantity of more than 1000 tons per yard for the length and depth; and that if carriers of some kind, either horses or steam, can be had to convey the barytes to the station, more than 500 tons per month can be sent off; and that, too, with a small number of miners. By opening up (say) two levels more, they could get double that quantity. I have seen lately some very nice samples of lead and blende from there, quite as good as from some of the lead mines in Wales and elsewhere, in connection with sulphate of barytes. Should this immense lode turn out to be a lead lode in depth, it would be a second Snailbeach. In the Snailbeach Mine the lode was composed at surface (and for a great many yards below) of sulphate of barytes. Large quantities of this (barytes) have been sold from there the last five or six years. But, leaving the lead and blende question at rest, the Wotherton Mine is a very profitable concern, and only wants the means to get the barytes off, which the company will do shortly. I heard a gentleman of most extensive experience say it is one of the finest lodes he had ever seen.

We do not see this mine reported on in your valuable Journal, so that the mining public are not aware of such a property. It does seem strange that parties in the neighbourhood of the mine should be so much against the traction-engine, especially those who we should think would do all in their power to further the interests of mining, but so it is. In conclusion, the stuff is in the mine, and there is not the least doubt but the company will get it off.

I am glad to learn from the reports in the Journal of the improvement in Tankerville, and also the steady progress of Roman Gravel, after all the letter writing about the mine, and by many who, perhaps, never saw it. The Bog Mine, too, only wants capital, and Pennerley a little time to bring it into a more profitable state. I should like to see Perkins Beach started with sufficient capital to get a new shaft down in a convenient place to command this highly mineralised property, but hope to take up the subject again shortly.

Shrewsbury, Feb. 3.

CORRESPONDENT.

REMARKS ON THE ORIGINAL CORRESPONDENCE IN THE SUPPLEMENT TO LAST WEEK'S "MINING JOURNAL."

SIR,—The Channel Tunnel? We are glad to see this scheme scientifically and commercially considered, believing, as we do, that it must, if made, prove a commercial failure, and on the part of this country a grave political blunder. "Quicksilver Extracted in Sarawak." Mr. Hubert Bankhart is entitled to our warmest thanks for giving us so good a practical lesson on this subject.

"Mining in the Pacific States." Mr. Melliss having got out of the fog which enclosed his last week's letter, seems to improve on acquaintance. The mines described by Mr. J. D. Power, if his opinion be correct, must be worth looking after.

"Extraction of Metals from their Ores." We shall look out with deep interest for Mr. Thomas Clark's patent, and shall be glad if it realises half of Mr. Clark's anticipations.

"Iron Ores in Australia." We have reason to believe these exist here in great abundance, although we think the time is not yet come when they can be extensively wrought to any great advantage.

"The Manufacture of Arsenic." Surely the commissioners have discovered a "mare's nest." The wisdom of our legislators and their commissioners is truly wonderful, as evidenced by the recent Acts of Parliament affecting mining. Only let the same wisdom be applied now to our smelting the metals, and to the preparation of acids and alkalis, and we shall soon see the happy day which is to free us from all those enterprises by which man has to earn his bread by the sweat of his brow, and land us into Utopia.

"The West of England Chemical Company." We have no doubt that capital might be raised for resuscitating the ancient practice of alchemy. Why not tack on that?

"Successful and Unsuccessful Mining." Mr. Edward Skewis has evidently gone to sea in a cockle-boat, and would be glad if he only could be landed. Why not name all the places where he witnessed so many wonders? Such a voyage would far exceed in interest Gulliver's or any other guller's travels.

READERS OF THE "MINING JOURNAL."

JAVALI MINE.

SIR,—In reference to my letter, dated Jan. 26, in last week's Journal, I beg to correct an error which has occurred, making an alarming difference in the value of Javali Mine by present quotations. It should have been stated that we have a mine returning 2400*l.*, at least, on a capital of 9000*l.*, and not 30,000*l.* as printed: if we call the shares but 5*l.*, having only 22,500 issued. Since writing I observe that "Puzzled Shareholder" says there are less than the above number of shares, then the mine can be valued at less than 8000*l.* (say). The extensive Chontales returned (by last advice) 3*l.* 6*d.* of gold per ton only. Javali always averages 7*l.* 6*d.* at the lowest calculations.—London, Feb. 2.

BAYANS.

JAVALI MINE.

SIR,—This property, situated in Nicaragua, apparently presents every indication and requirement to become a great success—indeed, a prize during 1875, and being a limited concern cost-book terrors at once vanish. Some splendid gold returns, averaging 500*l.* a month, have been made, as much as 1300*l.* having been netted in 18 days. Several other results equally surprising have also been made. Not a year since Capt. Sohns stated that he had over 100,000 tons of 8 dwts. dust, and by further explorations he could vastly increase his reserves. Shareholders in Javali should just now look after this security, and hold fast their shares (if I might turn about to take its position amongst the gold mines on the market—certainly the cheapest venture ever quoted on "Change, and subject to no fluctuations in its product (gold), labour being plentiful all the year round. The mails are just now watched with interest by the proprietors (the directors) being sanguine of success, and no doubt is entertained but the original shareholders will be recompensed for their confidence in the property. The mine rests on no puffs whatever, simply on its own merits, and the directorate is considered satisfactory. The machinery is in good condition, and powerful enough for a continual course of prosperity.

Your "puzzled" correspondent, in the Journal of Jan. 16, need not remain long mystified if he will but wait, and hold to his shares a few weeks longer. As there are less than 22,500 shares taken up out of 50,000, and the price he called 8*l.*, above 8000*l.*, the figure at which an investor could buy up this valuable mine.

A WELL-INFORMED CORRESPONDENT.

[For remainder of Original Correspondence, see to-day's Journal.]

CHEMICAL AND GEOLOGICAL ESSAYS.

The original researches of Dr. T. Sterry Hunt have contributed much to the advancement of scientific knowledge, so that the collection of a few of his more important essays* will be appreciated by a large number of readers. The object of the present selection is to furnish a record of the author's researches and his conclusions as to the chemistry of the air, the waters and the earth in past and present times, the origin of limestones, dolomites, and gypsums, of mineral waters, petroleum, and metalliferous deposits, the generation of silicated minerals, the theory of mechanical and chemical sediments, and the origin of crystalline rocks and veinstone, including erupted rocks and volcanic product, thus covering nearly all the more important points in chemical geology. They have, moreover, been by him connected with the hypothesis of a cooling globe, and with certain views of geological dynamics, making together a complete scheme of chemical and physical geology. The essays have a certain historic value, and serve to fix the dates of the origin and development of views, some of which, after meeting with neglect and with active opposition, are now beginning to find favour in the eyes of the scientific world. It has been Dr. Sterry Hunt's fortune to enumerate in very many cases find these views propounded by others as new discoveries or original conclusions. Naturally desirous, however, of vindicating his claims to priority in certain of these matters he has felt that the best way of attaining this result was to reprint the original essays.

The first essay of the series which was read before the Canadian Institute, at Toronto, March 18, 1855, and printed in the "Canadian Journal" for May of the same year, may be regarded as a first contribution to the theoretical notions subsequently developed. He maintains that the earth's solid crust is a mixture of igneous and sedimentary rocks, and that the igneous rocks are everywhere deeply concealed beneath its own ruins, which form a great mass of sedimentary strata permeated by water. As heat from beneath invades these sediments it produces in them that change which constitutes normal metamorphism. These rocks at sufficient depth are necessarily in a state of igneous fusion, and in the event of fracture of the overlying strata may rise among them, taking the form of eruptive rocks. Where the nature of the sediments is such as to generate great amounts of the elastic fluids by their fusion earthquakes and volcanic eruptions may result, and these, other things being equal, will be most likely to occur under the more recent formations. In the second essay, a paper on "Some Points in Chemical Geology," sent to the Geological Society of London in August, 1858, read January, 1859, and published in full in the Quarterly Journal of the Society for November, 1859—he points out that according to Sir John Herschel's view all volcanic phenomena have their source in sedimentary deposits, and this ingenious hypothesis, which is a necessary consequence of a high central temperature, explains in a most satisfactory manner the dynamical phenomena of volcanoes and many other obscure points in their history: as, for instance, the independent action of adjacent volcano vents, and the variety of nature of their ejected products. Not only are the lavas of different volcanoes very unlike, but those of the same crater vary at different times; the same is true of the gaseous matters hydrochloric, hydrosulphuric, and carbonic acids. As the ascending heat penetrates siliferous strata we shall have hydrochloric acid from the decomposition of sea-salt by silica in the presence of water, while gypsum and other sulphates by a similar reaction would lose their sulphur in the form of sulphurous acid and oxygen. The intervention of organic matters either by direct contact or by giving rise to reducing gases would convert sulphates with sulphurets, which would yield sulphuretted hydrogen when decomposed by water and silica or by carbonic acid, the latter being the result of the action of silver upon earthy carbonates. We conceive the ammonia so often found among the products of volcanoes to be evolved from the heated strata, where it exists in part as ready-formed ammonia (which is absorbed from air and water, and pertinaciously retained by argillaceous sediment), and in part formed by action of heat upon azotised organic matter present in these strata, as already maintained by Bischof. Nor can we hesitate to accept this author's theory of the formation of boric acid from the decomposition of borates by heat and aqueous vapour. The metamorphism of sediments *in situ*, their displacement in a pasty condition from igneous aqueous fusion, as plutonic rocks, and their ejection as lavas, with attendant gases and vapours, are then all the results of the same cause, and depend upon the differences in the chemical composition of the sediments, the temperature and the depth to which they are buried, while the unstratified nucleus of the earth, which is doubtless anhydrous, and according to the calculations of Messrs. Hopkins and Hennessey, probably solid to a great depth intervenes in the phenomena under consideration only as a source of heat. The volcanic phenomena of the present day appeared, as far as Dr. Hunt was aware, to be confined to regions covered by the more recent secondary and tertiary deposits, which we may suppose the central heat to be still penetrating (as shown by Mr. Babbage), a process which has long since ceased in the palaeozoic regions. Both normal metamorphism and volcanic action are generally connected with elevations and folding of the earth's crust, all of which phenomena we conceive to have a common cause, and to depend upon the action of sediments and the subsidence consequent thereon, as maintained by Mr. James Hall in his theory of mountains.

The "Chemistry of Metamorphic Rocks," which formed the subject of a paper read before the Dublin Geological Society in April, 1863, is the next essay. The notions expressed in the first paragraph as to the existence of crystalline strata of all geological ages, the results of a subsequent alteration of palaeozoic mesozoic, and even cenozoic sediments, are in strict accordance with those which were then and are even now maintained by most of the authorities in geology, and at that time had scarcely been questioned. Hence it is that the rocks of the present day designated the third and fourth series were in conformity with the conclusions generally accepted referred to the palaeozoic age. It will, however, be seen that Dr. Hunt had at that time no doubt that the rocks of the third or Green Mountain series, then regarded as altered Lower Silurian, were, as Macfarlane had already maintained, the equivalents of a part at least of the Primitive Slate or Urschiefer formation of Norway, the Huronian representing another part of the same formation, while Highgate soon after expressed the opinion that the phenomena of the third and fourth series were in conformity with the conclusions generally accepted referred to the palaeozoic age. It will, however, be seen that Dr. Hunt had at that time no doubt that the rocks of the third or Green Mountain series, then regarded as altered Lower Silurian, were, as Macfarlane had already maintained, the equivalents of a part at least of the Primitive Slate or Urschiefer formation of Norway, the Huronian representing another part of the same formation, while Highgate soon after expressed the opinion that the phenomena of the third and fourth series were in conformity with the conclusions generally accepted referred to the palaeozoic age. It will, however, be seen that Dr. Hunt had at that time no doubt that the rocks of the third or Green Mountain series, then regarded as altered Lower Silurian, were, as Macfarlane had already maintained, the equivalents of a part at least of the Primitive Slate or Urschiefer formation of Norway, the Huronian representing another part of the same formation, while Highgate soon after expressed the opinion that the phenomena of the third and fourth series were in conformity with the conclusions generally accepted referred to the palaeozoic age.

The "Chemistry of the Primeval Earth" was explained by Dr. Sterry Hunt in a Friday evening lecture given before the Royal Institution of Great Britain, in May, 1867, and the next essay is reprinted from the *Proceedings of the Royal Society* of the same date. As an attempt to bring together in a connected form some of the latest conclusions of chemical and geological science it attracted at the time considerable attention, having been frequently reprinted, several times translated, and adversely criticised both in the "Chemical News" and the "Geological Magazine." The criticisms were fully referred to at the time, and the value of them can now be better judged of. In the essay on the "Origin of Mountains," published in the "American Journal of Science" for 1861, which follows Dr. Hunt accepts the conclusion that the earth instead of being a liquid mass covered by a thin crust is essentially solid to a great depth, if not indeed to the centre, so that the volcanic and igneous phenomena generally ascribed to a fluid nucleus have their seat as Keferstein and after him Sir John Herschel long since suggested, not in the anhydrous solid nucleus, but in the deeply buried layers of aqueous sediment which permeated with water, and raised to high temperature, become reduced to a state of more or less complete igneous fusion. So that beneath the outer crust of sediments and surrounding the solid nucleus we may suppose a zone of plastic sedimentary adequate to explain all the phenomena hitherto ascribed to a fluid nucleus. This hypothesis is not only completely conformable with what we know of the behaviour of aqueous sediments, impregnated with water and exposed to a high temperature, but offers a ready explanation of all the phenomena of volcanoes and igneous rocks, while avoiding the many difficulties which beset the hypothesis of a nucleus in a state of igneous fluidity. At the same time many changes in volume resulting from the contraction of the nucleus would effect the outer crust through the medium of the more or less plastic zone of sediments, precisely as if the whole interior of the globe were in a liquid state. In this seventh essay, reprinted from the "American Journal of Science" for April, 1873, and which was called forth by Prof. Joseph Le Conte's recent essay on "The Formation of the Earth's Crust," Dr. Sterry Hunt remarks that he had been endeavouring since 1858, in the language of Prof. Le Conte "the theory of igneous agencies on the basis of a solid earth." "Alone up to this time," he continues, "so far as I am aware, I have laboured to expand complete and give geological and chemical consistency to the suggestion long since put forth by Keferstein and Sir John Herschel, that the deeply-buried and water-impregnated strata between the superficial crust and the earth and the solid nucleus constitute a region of plastic material adequate to explain all the phenomena hitherto ascribed to a fluid nucleus." The result of Dr. Sterry Hunt's researches on the chemistry of the salts of lime and magnesia undertaken with reference to the theory of mineral waters and the origin of calcareous and magnesian rocks, was first announced in the "American Journal of Science," for July, 1858, and subsequently in this length in an essay in that journal, in September and November, 1859. The paper, part of which is reprinted under the title of "Limestones, Dolomites, and Gypsums," he treated, firstly, of the action of solutions of bicarbonate of soda on the soluble salts of lime and magnesia, whilst the second part relates to the reactions between solutions of bicarbonates of lime and sulphates of soda and magnesia; the third describes the production of the double carbonate of lime and magnesia (dolomite); the fourth discusses various facts in the history of gypsums, dolomites, magnesites, and limestones; and the fifth treats of the mode of formation of these rocks. The continuation of the subject in the same journal for July, 1866, includes researches on the hydrated double carbonates of lime and magnesia, on superaturated solutions of these two carbonates, and on the alleged decomposition of gypsum by dolomite, besides further experiments on the artificial production of dolomite. [To be continued in next week's Mining Journal.]

* "Chemical and Geological Essays." By THOMAS STERRY HUNT, LL.D., F.R.S., &c. Boston, U.S.: James R. Osgood and Co. London: Trübner and Co., Ltd. gate Hill.

Meetings of Public Companies.

PADESWOOD UNITED COAL, CANNEL, AND IRON COMPANY.

The shareholders of this colliery held their first general meeting on Feb. 1, 1875, being selected as the most central station for that purpose. A large number of influential gentlemen connected with it attended, all of whom expressed their utmost satisfaction with the manner in which the works were carried out, and the greatest confidence in the board of directors, who were unanimously re-elected. The business of the meeting consisted chiefly in passing the adoption of the balance-sheet, and discussing the merits of the colliery. As with every new undertaking the first costs are invariably heavy, and generally fall upon the few, with the above undertaking the outlay has not been excessive, and the support given has been very flattering. There is at present a prospect of a good return, as all the dead work has been nearly completed. The Main return, and Brasseys seam will in a month or so be capable of an output of from 120 to 150 tons per day, and, of course, will daily increase. All necessary plant is erected, and in a position for a draught of 400 tons per day. The quality of the seams are also very good, and commands excellent prices. There appears no reason why the directors at their next general meeting cannot declare a good dividend.

The engineer's report will shortly be published for the benefit of the shareholders, when the prospects of the colliery will be more fully discussed.

NEWFOUNDLAND MINING COMPANY.

The third ordinary general meeting of shareholders was held, on Monday, at the City Terminus Hotel, Cannon-street, Sir ALEXANDER MALET, Baronet, K.C.B., in the chair.

The SECRETARY read the notice convening the meeting.

The CHAIRMAN said there were so many and such important matters requiring their attention that day that he was sure they would see the expediency of his confining the remarks he had to make to the briefest possible compass. He felt bound, however, to summarise the history of last year. Preceding the change of management he must review their present actual state, condition, and prospects. At the extraordinary meeting held on Sept. 8, and in the circular then issued, as well as in the previous circular of June 1, the history of La Manche Mine was summed up, and at that Mr. Webster gave such full details of the then existing state of things that he need do no more than cursorily allude to such occurrences as took place previously to the visit Mr. Webster paid to Newfoundland in June and July, which coincided with the change of management. The most important of these events was the failure of the experiment of working the mine by the Irish miners sent out in the autumn of 1873. That it was a failure he was free to confess; but whence arose the mistake? He was reluctant to impute blame to anyone who was absent, and their late manager, Mr. Cohn, was not there to defend himself, and he was afraid he had no friend present at the meeting to take his part; but after patient enquiry they could come, he was sorry to say, to no other conclusion as regarded this matter than that Mr. Cohn's management of those men had been a most injudicious one. The consequences had been they worked ill, were insubordinate, and at length showed their temper by a violent and unprovoked assault upon the mining captain. Now, from all enquiry which it was in their power to make, it appeared that the outbreak had been the result of a series of petty grievances which sufficed to explain, if not to justify, the Irishmen's resort to what they might consider their national mode of showing their sense of ill usage. Moreover, the miners instituted proceedings against them, and in the strong feeling which the occurrence had produced in their favour, and it had been necessary to compromise the action, which was done by Mr. Webster, they all believed, in a very judicious way. (Hear, hear.) But Mr. Webster's second visit to the mine showed there were grounds for even graver charges against Mr. Cohn than want of tact and kindness in dealing with his men. Serious negligence and mismanagement in the working of the mine had been discovered, the development had been neglected, and the reports sent home as to the quantity of ore raised were deceptive. Mr. Cohn had always led them to expect that a cargo of ore (say, 250 tons at least) would be for shipment in the month of June or July, and that they might fairly expect a second shipment in the course of the season. The returns of ore raised sent home by Mr. Cohn, backed by Capt. Currow's reports, kept up this expectation; but although they were told at the end of March that 300 tons had been raised, Mr. Webster found in June on arriving there that barely 40 tons were ready dressed and fit for shipment, and that of the stuff raised and returned by Mr. Cohn as ore much ought never to have come to surface, since thereby not only heavy and undue costs in handling for the mine incurred, but further labour was rendered necessary in spalling and preparing the ore for dressing, which never ought to have been called for. In cases of that kind it was not easy to apportion the blame, but as Capt. Currow was an experienced miner it was difficult to exonerate him or to lay much of it, as he had heard it attempted to be done, on the Irish miners. That it was no fault of the nature of the minerals which the mine yielded was abundantly evident by the specimens on the table before them, which were not as they were assured selected for their richness, but strange to say taken for the most part from Mr. Cohn's mine, a part of their mine which Capt. Bradley had found virtually abandoned, and not only abandoned, but choked with old timber and rubbish, evidently thrown down purposely, and as the miners informed Capt. Bradley, by Capt. Currow's orders. In ceasing to advert to Mr. Cohn, he was bound to exonerate him from one of the imputations laid against him—that he had left largely indebted to the company. That was an error—an examination of the accounts showed that in dealing with the stores the cost charged to the miners must have been carried to the company's accounts, and that Mr. Cohn, as had been reported by the accountant, had in no way benefited by those sales. He was, therefore, very glad to exonerate him from the charge, which would have been highly dishonourable if it could have been proved. He should now turn to the consideration of the present state of the mine, and review what had been done since the new mining captain, Capt. Nancarrow, had entered on his duties, and Capt. Bradley had commenced the supervision of the mine, and to what he had to say he would beg to call their particular attention. First, he would remark that since the new management the mine had been very much improved. These were the proceedings which had been taken. Hoppers under planned (understand) had been abandoned, the sinking of winzes, Doctor's and McCoy's, to gain the 20 ft. level had been duly prosecuted, drifts to east and west in the 20 ft. level below Doctor's shaft were already commenced in ground yielding 1½ ton per fathom. McCoy's shaft had been re-opened, and sunk towards the 20 ft. level in a lode 4 ft. wide, yielding fully 4 tons per fathom, and the widening of Kelley's shaft as a central winze for the future hauling of the ores from the lower levels had been planned, and he believed already commenced. New tramways both above and underground had been laid down, short distances as far as the means at the disposal of their executive allowed for the efficient working of the mine. The machinery had been supplied with a new wire-rope for winding, while additional tram rails had been sent out from this side and laid, a new coal store put up, and the hauling and pumping power kept well in order. He must not omit to mention an important occurrence in the mine—that in driving at the 20 ft. level below Doctor's shaft the lode had yielded some fine stones of copper—an indication the value of the prospects of the mine were encouraging. It was capital the lode only brought home 120 tons of ore, but she was of small capacity, and having got around nearly 30 tons were thrown overboard, for which they would obtain salvage. But in the short time since Capt. Bradley had been at the mine, and with scarcely any stopping going on, he had raised and got ready for shipping over 40 tons of ore, there was more than, or as much, as Capt. Cohn did in the twelve months he was there. Now, that ore had been raised by Capt. Bradley and Nancarrow in the legitimate working of the mine—by driving and sinking winzes and drifts. (Hear, hear.) The shareholders had then, a mine which had only yet been sunk to the 20, a mine with a lode traced on the surface through a large extent of the property leased to us, three miles in extent. Of this only some 1800 ft. had been opened, and the mine was now giving the fairest indications of improving in depth. These were prospects which encouraged them to look forward to a long series of productive years. Before concluding he wished to advert to a very satisfactory arrangement which he might say was made of a question which had given them some anxiety. Their lease comprised a territory three miles in length by two miles in breadth, and it was rumoured that one-half of the land was to be taken from them. But an enquiry made by their solicitor in the proper quarter ascertained them that nothing of the kind had been intended; that their occupation of the land would not be disturbed, and that if any misapprehension had arisen it would be rectified by their landlords in the early spring of the year. He must say that all their reports from Capt. Bradley and Nancarrow confirmed the confidence in their management. The mine was assuming quite a new appearance under economy consistent with the due prosecution of them, and he believed that as long as Capt. Bradley and Nancarrow remained in office the management of the mine was in safe and efficient hands. (Hear, hear.) It was only that day that he had received a bill of sale of their ore, and he had the greatest satisfaction in telling them that the assay comes higher than had been anticipated, and consequently the return was greater. It assayed from 80 to 82 per cent. of lead, and the arrangement was that the silver, of which there was some as high as 6 ozs., should be paid for over. The payment for the lead came to nearly 30s. more than their cargo last year was sold for, all tending to show the shareholders that the mine was improving. (Hear, hear.) He (the Chairman) then concluded by moving the adoption of the report and accounts.—Colonel FEILDEN seconded the resolution.

Mr. TUBBY asked why there had not been an independent audit of the accounts, as had been promised in November last?—The CHAIRMAN replied that there had been an independent audit.

Mr. TUBBY said it had not appeared.

The CHAIRMAN explained that the ordinary auditor had confirmed the independent audit which was made by Mr. Thornton.

Mr. CHANDLER remarked the report, the candour of which he was bound to acknowledge, called attention to Mr. Cohn's management and mismanagement.

What he had heard he cordially endorsed, but he should like to ask what was the extent of Mr. Cohn's interest in the company? The nominal capital is 10,000, in shares of 10s. each, and it appeared that of this there had been raised 74,000. He wanted to know how much of the item lease of mines, &c., was represented by shares and how much by cash?—The SECRETARY replied, the purchase-money was partly composed of 46,000, in shares.

Mr. CHANDLER said he thought the amount of preliminary expense—4800—bore a very undue proportion to the capital raised.

Mr. DEANE thought that if even the directors did make a mistake in allotting, after so small an amount of money subscribed, they did it under the sanguine feeling of the moment, and they did it, moreover, for the best at the time. It was scarcely a very profitable proceeding to discuss the matter, seeing that not only had these accounts been passed at a previous meeting, but that they could not alter them now.

Mr. CHANDLER said the directors were now appealing for a large portion of the capital that they did not obtain at the time.

Mr. DEANE replied that their only argument was that they were strongly impressed with the value and excellence of the mine; and, indeed, so far as the mine was concerned, it had absolutely proved far better than what they then thought of.

Mr. CHANDLER wished to know what actual amount of money they started with?

The SECRETARY replied about 24,000. He said also that the Irish labourers went out in two lots—one in September and one in October.

Mr. DEANE said that, at the request of his co-directors, he went over to Ireland, and there on engaging the men he got the highest possible character with them from the managing director of the mine. He took the trouble to put besides each man's name the length of time that he had been engaged, and he not only sent those men out, but he accompanied them as far as Queenstown, and saw them off. He felt assured that if they had not quarrelled with Capt. Cohn they would have worked well and satisfactorily.

Mr. CHANDLER asked whether they could not somewhat economise their expenses? There were nearly 8000, under the head of expenditure, against one solitary shipload.

Mr. DEANE thought the directors set the example—they had never touched a single penny of the company's money. (Hear, hear.)

The resolution for the adoption of the report and accounts was then put to the meeting, and carried unanimously.

The CHAIRMAN said he wished to preface the second resolution he had to put to the meeting by a short statement of facts, and by certain remarks pertinent to the question.

He had to make a resolution of raising more capital, and it was necessary that he should first inform the meeting that their capital was expended, and that there were, consequently, urgent demands made upon them which they were unable to meet, and the alternative was that unless they were supported by the shareholders in the attempt to raise fresh capital they have no result but that of closing the mine. Before proceeding to that extremity he wished to remind them what their property was, and what they had to lose. They possessed a lease for 21 years of 3000 acres of land, with the power of buying the fee simple within 10 years. On this land a mineral lode had been traced for nearly half the length of the property, and as it again showed itself at a distance of seven miles across the bay the presumption was it underlaid the entire extent of the concession. The mine was a young one; it was only 20 fms. in depth, and it was improving at that depth. The recent sale of ore at Swansea, at 15s. 6s. per ton (the silver over 3 ozs. per ton, to be paid for above), was a most satisfactory proof of the high quality of the ore. (Hear, hear.) The assays were the positive proofs that what he asserted was true. The extent of the ground might enable them to sell or lease a portion of it. And as in all probability a projected telegraph would run through the mine, and as it again showed itself at a distance of seven miles across the bay the presumption was it underlaid the entire extent of the concession. The mine was a young one; it was only 20 fms. in depth, and it was improving at that depth. The recent sale of ore at Swansea, at 15s. 6s. per ton (the silver over 3 ozs. per ton, to be paid for above), was a most satisfactory proof of the high quality of the ore. (Hear, hear.) The assays were the positive proofs that what he asserted was true. The extent of the ground might enable them to sell or lease a portion of it. 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—Mr. MOFFAT seconded the resolution, which was carried unanimously.—On the motion of Mr. M'CLURE it was resolved—"That the directors be, and are accordingly hereby, authorised and specially empowered (1) to surrender the whole or any part or parts of the ground comprised in the existing lease, or any of them; (2) to enter into a new lease or leases of the same ground, or a part or parts thereof; (3) to agree with any person or company for their taking a lease, or leases, of any part, or parts, of the ground included in the existing or new lease or leases, all on such terms and with such conditions as the directors shall deem advisable.

It was also agreed that the Chairman, Mr. Andrew M'Far, and Mr. Alexander Harvey be re-elected directors of the company, and that 100l. be allowed the directors, to be divided among them.

After Mr. TAYLOR had given a technical explanation of the workings the meeting separated.—[The sales of ore during January, 1875, amounted to 1363l. 4s. 6d., and in the corresponding month last year to 843l. 15s.]

LONDON AND CALIFORNIA MINING COMPANY.

The ordinary general meeting of shareholders was held, on Thursday, at the City Terminus Hotel, Cannon-street, Mr. CHARLES WRIGHT in the chair.

Mr. JOHN SAUL (the secretary) read the notice convening the meeting. The report of the directors and the balance-sheet were taken as read.

The CHAIRMAN said he had not expected for the second time to be placed in the chair while Mr. Price was really the Chairman of the company. On the last occasion he (Mr. Price) was called away by a very unfortunate event, and at the present time he had only just returned from the Continent, and, therefore, did not consider himself up in matters, and he (the Chairman) was compelled unwillingly to take the chair. He would not naturally have taken the position in which he was now placed, and he hoped the shareholders would excuse any omissions. Before asking them to pass the report and accounts he would as usual, with the leave of the shareholders, offer a few remarks explanatory of their position. The reports and accounts presented to-day were for the half-year ending Sept. 30, 1874. The profit and loss account showed a loss on the working of the half-year of 822l. 10s., an improvement on the previous half-year of 112l. 8s. 3d., the loss on the working of the accounts being 37,053l. 4s. As the Erie and Pennsylvania Mines were closed in the period under review, he would only add regarding them that a profit of 147l. 10s. was made on account of the last mine for the letting of the hoisting works, the right of passage through the mine, and crushing ore for their neighbours. The Original Amador Mine gave them during the same period 969l. 10s. in bullion, which, with the absence of the payment of any commission to the Messrs. Cross, made a very favourable difference in the half-year's working above referred to. This was all that he thought need be referred to, or that the shareholders would wish to know about, the report and the accounts he would have to refer to again presently. The agents' report for the half-year stated that after opening up 816ft. of ground by shafts, drifts, and cross-outs in the 8th level a lode was found large and well defined, but had not gold enough to yield a profit. It was then decided to suspend operations in the old quarters, except in the gulch shaft, for which it was intended to reach under the prospect shaft, and also to ventilate the mine, and to use it for the purpose of hoisting the produce of the shaft. Of course, it did not follow that there was no gold in that part of the ground, for the discovery of the lode in 1872 that gold might yet be found in the old workings, and probably at no great depth. However, this information was worth very little; at all events, if gold was there the probability was that as regards the present generation the discovery would be of little moment, for in all probability they would gain nothing by it. He would give the shareholders a brief outline of the company's properties. At the Original Amador Mine they had a length of 1451 feet, and a breadth of 500 feet, bounded by the Keystone Mine to the south of it, and by the Bunker Hill Mine on the north of it. The working of the Amador Mine had up to the end of March, 1874, been confined to the southern end of the mine, but Mr. Johns then turned his attention to ground further north. He then began with the Prospect shaft, of which he (the Chairman) would give a short history as the shortest way of disposing of it, as it would give the shareholders a better view of the prospects before them. After consultation between Mr. Johns and Mr. Olliver, at the end of March, 1874, it was decided to prospect new ground by cutting a trench 250 ft. from the northern boundary, and they found a small gouge, or clay seam, on which the Prospect shaft was sunk. At a depth of 80 ft. rock work from 312 to 815 per ton was discovered, and the ore raised from this point had resulted in a profit of about 4000l. Sinking was continued to a depth of 130 ft., where the first level was run in a northerly direction, following the vein. Mr. Johns, in his report to the directors, stated that this was the finest body of ore that he had ever seen. From August to the end of the year 1000 tons of ore had been taken out of it, giving an average of 60 tons per week; and lately a winze had been sunk at the end of the level through ore worth 40 per ton, and as it was running north the ground gave more favourable indications for fresh discoveries. In the middle of October 10 stamps were set going, and on December 6 this number was increased to 20, and the value of the ore crushed was 355,274l. at a cost of 18,904l. giving the company a net profit of 18,370l. This did not give a true state of the case, for the milling and mining alone would not probably cost that amount, but more money had been spent, and more attention had been given to the development of the property than to the crushing of the ore. It would thus be seen that the mine was not only paying its way, but that it was giving a very considerable profit, after providing for all liabilities. On December 9 a second level was commenced 75 ft. below the first level, in the hope of reaching the lode at that depth. By the next accounts 50 ft. had been driven without finding it, but as the level runs to the north, and there is a tendency in the lode to run east, it might have been missed. If the lode should be found endeavours would be made to reach it at a depth of 400 ft. from the Bunker Hill Mine, where he hoped they would succeed in finding what they were looking for. He must now refer again to the balance-sheet in connection with the loan from Mr. Coulter, where it would be seen that he (Mr. Coulter) was a creditor to the amount of 10,000l., with interest amounting to 950l. 11s. 6d., and bill payable for 1000l. This loan had, unfortunately, figured in the last three balance-sheets, but if the loan had not been made when the company was in the position it was in at the time, the shareholders would have been very glad to see, for it would make the next balance-sheet look much better than the present one, and it would enable the company to go on with the new discoveries, especially as the mine had been provided with excellent machinery. The directors hoped, and he might say expected, that no large expenditure would be gone to before the company was earning for the pockets of the shareholders. By his remarks the shareholders have seen that they were seeking for the lode at four different points, and if the lode follows the example of the Keystone lode, with which there is much in common, this company ought to be able to get a very satisfactory dividend. (Applause.) The directors had that morning received a telegram from Messrs. Cross and Co. (as they had written for the very latest information, so that they might be able to lay it before the shareholders), which stated that they were looking for an early improvement in the second level, north of Prospect shaft. The ground had improved, and they were expecting to make better progress. The first clause referred to the ore, and the second as to the progress made in running the drift. They also stated that Bunker Hill Mine vein gave indications of permanence, and maintained its quality close to the surface. The upper stops in the first level had improved, and the clean-up was estimated at 18,000l.

A SHAREHOLDER: Is that the clean-up at Bunker Hill?—The CHAIRMAN: No, at the Original Amador Mine. Messrs. Cross and Co. also stated that the first level, which now runs north and south, was dipping to the hanging-wall in greenstone, while the foot was in slate. Most of the successful lodes were found in ground of this formation; and, though it did not prove that they would have a good lode, yet it was the rule, and if it should not turn out so it would be an exception to the rule. Mr. Johns wrote Messrs. Cross and Co. on Dec. 11, informing them that there were all the indications in the second level that the lode was close at hand, and he (the Chairman) hoped that by the next news they received they would hear of its being discovered. He had endeavoured to condense what he had to say that he might not take up their time, and he had given the leading features of the movements. At the meeting held twelve months ago, at which he had the honour to preside, they were in a state of great depression with respect to their mine, and six months later, when he occupied the same position, they were also in a state of great depression, but things were looking more favourable. Cross and Co. had given up their commission, and the new shaft was being sunk, so that they were seeing their way to some improvement. From that time to six months ending Sept. 30 last they had gone on spending money, but from that time to the present things had, he thought, been entirely changed. He certainly thought they had turned the corner, and from every indication there was good reason to expect that they were in a position of progress; and when any discovery was made the shareholders would have early information of it. (Hear, hear.) With these remarks he would propose that the report of the directors, together with the accounts, be received and adopted.—Mr. THOMAS HOWIE, together to second the motion.

A SHAREHOLDER said there was one matter connected with the Chairman's speech which he did not quite understand. He (the Chairman) had stated that owing to some gift which Mr. Coulter had made the loan account had been reduced to between 2000l. and 3000l. Perhaps the Chairman would explain the matter further.

The CHAIRMAN, in reply, said that he should have stated that Mr. Coulter had the intention of giving up the whole of that sum to the shareholders. (Cheers.)

The SHAREHOLDER: That is a very important point left out in your speech.

Mr. TENDRON said he certainly thought the profits would have paid that amount. Some of the remarks made by the Chairman were exceedingly encouraging, and he took it that as the letters and telegrams read by the Chairman were of a later date than the report the unfavourable nature of the following clause would have been removed.—"Level No. 2: There is no indication of a vein in this level yet. The ground is very hard, and the greenstone is dipping slightly to the west, which is annoying, as we shall have to cross-cut into the greenstone in order to find a ledge, which will delay matters considerably." He took it that they might consider now that they were on a fair path to cutting the lode in this level (No. 2), and that the discouraging part of the paragraph might be removed.

The CHAIRMAN said that was the case, as might be seen from the extract from the letter which he had read.

Mr. BERGTHEIL asked if there was any information to be given with regard to the committee of enquiry appointed; whether they were likely soon to report to the shareholders, and if the gift of 17,000l. had anything to do with it?

A SHAREHOLDER: What are the circumstances under which the loan to Mr. Coulter has been cancelled?—The CHAIRMAN: I am really not at liberty to reply to that question.

Mr. BERGTHEIL thought it would be better to leave the matter until the committee had issued their report.—The CHAIRMAN acquiesced.

Mr. SCHOFIELD said the paragraph with respect to the probability of a discovery of the vein at a deeper level was rather discouraging, and he would ask if the lode maintained its width at a depth, and if the winze down holding down?

The CHAIRMAN, in reply, said the winze was going through ground worth 40

per ton, and was maintaining its width. He had given the shareholders the facts, and had not exaggerated them, or drawn on his imagination.

Mr. SURGEY (one of the committee of enquiry) said the report of the committee was now in the hands of the directors to consider. The committee was appointed by the shareholders to make a report on the position of the company, and this they had done.

The CHAIRMAN said, in answer to that remark, he should state that the report referred to was sent in to the directors one day before the notice was issued calling the meeting, and, therefore, the directors would not have had time to get it printed and a special meeting called within the time legally required. Their intention was to call the special meeting for the consideration of the report of the committee at the same time as the ordinary meeting. The report had been returned to the committee after some consideration on one of the clauses. As this report dealt with the directors and their doings, as well as everything else connected with the company, it would be completely out of place for the directors themselves to publish it. As the committee had sat in judgment upon the report, it would be their place to publish their report. The resolution appointing the committee stated that the committee should report the result of their enquiries, together with any recommendation they might think fit to the directors, and if the committee thought proper, to report to a general meeting of the shareholders to be called for that purpose. The report was an able one, and he thought as the committee had had the labour of compounding it that they should also have the honour of publishing it for the shareholders, and the directors would do their best to call the shareholders together when they had made up their minds.

Mr. WOLSTENHOLME (a member of the committee) said they had not enquired more about the directors than about the company generally. They had, to the best of their ability, given a statement of facts which had been communicated to the directors. He thought the observation that the committee had sat in judgment on the directors was a little uncalled for.

The CHAIRMAN, in reply, said that was his own opinion, and not that of the board. It was quite proper for the committee to do what they had done. The directors were quite prepared for the light, but considering the relative position in which they stood he thought the committee should publish their report.

The SOLICITOR of the company said the directors had not yet considered the report. Mr. Price, the Chairman, had only just returned to this country, and the report had only been returned by the committee that morning. There had been no board meeting to consider it, and, therefore, he thought any observations upon it were premature.

Mr. SCHOFIELD hoped the matter would be allowed to rest. If it was a matter of any delicacy as to who should publish the report he did not see why such a feeling should exist.

Mr. BERGTHEIL could not see how the report could affect the directors, as it had to come to the shareholders themselves as it left the hands of the committee.

Mr. SURGEY said, after the report was made some circumstances occurred which it was desirable to notice in the report, and, therefore, the report was returned to the committee to make certain alterations, and the report as a report had only been handed to the directors within the last day or two. The committee had endeavoured to perform their duty in a manner to the benefit of the company. (Hear, hear.) With respect to its publication, he thought every shareholder should have a copy, but as to sending copies to the press that was a very different matter.

After a few other observations the reports and accounts were unanimously passed, and it was arranged that the directors should consider the report made by the committee of enquiry, and consult with the committee as to its publication.

On the motion of Mr. BERGTHEIL a vote of thanks was accorded to the Chairman and the proceedings then terminated.

THE LOVELL MINING COMPANY.

A general meeting of shareholders was held at the offices, Chiswell street, on Jan. 30.—Mr. J. L. GODDARD in the chair.

Mr. ALFRED LAWRENCE (the secretary) read the notice convening the meeting.

Mr. G. P. BIDDER, jun., asked if Mr. Berry, the solicitor, was a shareholder?—Mr. BERRY objected to such a question.—Mr. BIDDER said he put the question to Mr. Lawrence, the secretary, and not to Mr. Berry.—Mr. LAWRENCE said that Mr. Berry was a shareholder.—Mr. BIDDER said the reason he put the question was because at the last meeting Mr. Berry was present, and although not a shareholder took a very prominent part in the proceedings.

Mr. BIDDER asked the reason the meeting had been convened for such an inconvenient time as two o'clock on a Saturday, and at the end of January, when it was not due till the first or second week in February?—Mr. BERRY said the calling of a meeting was the province of the secretary.

The SECRETARY said the meeting had been called because the cost-sheets and everything was ready to do so.

Mr. M. GREENE presumed it was the London manager who influenced the calling of the meeting.—Mr. CHAPMAN (London manager) said there was no particular reason for selecting such a day. The minutes of the last meeting were then read and approved.

A statement of receipt and expenditure (made up to January) was then submitted, showing a debit balance of 220l. 17s. 10d.

Mr. BIDDER said the secretary had not read the statement of assets and liabilities. The SECRETARY said it had not been made out.—Mr. BIDDER said they must have that statement.—Mr. LAWRENCE said the list of liabilities had not come up from Capt. Nancarrow.—Mr. BIDDER said that the accounts could not be put before the shareholders until the statement of assets and liabilities was between Messrs. Bartlett and Chapman and Capt. Nancarrow.

Mr. BIDDER said that according to the Act of Parliament there must be submitted a statement of the debtors and creditors of the mine.—The SECRETARY said he was unable to do so.

Mr. BIDDER asked if there were any debts due to the mine for moneys unpaid on shares?—The SECRETARY was not aware of any.

Mr. BIDDER asked whether, when Messrs. Bartlett and Chapman's affairs went into liquidation, there were considerable moneys due from them?—Mr. BERRY said this was quite a legal question, and he did not know what possible object there was in putting it, except to be for the purpose of getting evidence to put into an affidavit. He objected to the question.

Mr. BIDDER submitted he was in order in ascertaining whether what he had heard was a fact—that Messrs. Bartlett and Chapman were large debtors to the mine. He asked the secretary whether that was a fact?—The SECRETARY could not say. Messrs. Bartlett and Chapman were the treasurers and bankers to the mine.—Mr. BIDDER said that the statement of assets and liabilities, because he believed Messrs. Bartlett and Chapman, whose affairs had been in liquidation, were, and still are, large debtors in respect of unpaid sums due upon shares taken up and not paid for. He could not assent to the passing of the accounts.—Mr. GREENE moved that they be passed, and that the meeting be adjourned in order that a statement of assets and liabilities may be prepared and submitted.—Mr. KNOWLES seconded the proposition.

Mr. BIDDER moved, as an amendment, that as the accounts are incomplete and unsatisfactory, and without a statement of assets and liabilities as required by law, the meeting be adjourned to a future date.—The SECRETARY seconded the amendment.

Upon the votes being recorded, the secretary claimed to vote upon 823 shares. Mr. BIDDER took exception to the vote, because he had reason to believe that the secretary held those shares, or a large portion of them, as trustee for the company. The SECRETARY said he held them in his own right.

Mr. BIDDER asked if a large portion of those shares did not really belong to the company?

Mr. BERRY protested against such a question, and advised the secretary not to reply to it.

Mr. BIDDER said that Mr. Berry was a very recent and a very small shareholder, whereas he (Mr. Bidder) was the largest shareholder in the mine, and as such he asked the secretary, who was an officer of the company, to reply to his question with regard to those shares, and he had a right to be answered. As a shareholder, he asked the secretary whether 650 of those shares were not transferred out of the names of Messrs. Bartlett and Chapman to the name of Mr. A. Lawrence?—The SECRETARY objected to answer.

Mr. BERRY said he should ask the Chairman to reject that vote, or compel the secretary to answer the question.

Mr. BERRY said the question was put—Did Mr. Lawrence hold those shares in his own right? and he replied in the affirmative. As the secretary had reason to apprehend these questions were being put for the purpose of litigation, he was perfectly justified in refusing answering them.

After some further discussion the amendment was put, and carried.

Mr. BIDDER then proposed that a committee of management be appointed, who should have the business control of the books, and power to appoint or dismiss any officer of the company.—Mr. GREENSIDE seconded the proposition, which was put, and carried.

Mr. BIDDER then proposed that Messrs. G. P. Bidder, jun., J. L. Goddard, and R. Griffin be appointed members of the committee. Mr. Chapman had circulated papers stating that his (Mr. Bidder's) sole aim was to serve his own private ends. To prove that such was not the case, he did not propose that even a reasonable remuneration should be paid to the committee for their services. He then proceeded to explain that in consequence of having been refused a list of the shareholders, with their addresses, he had been compelled to instruct a solicitor in Cornwall to apply to the Vice-Warden. The Vice-Warden expressed an opinion that the list should not have been refused.

Mr. BERRY said the Vice-Warden never made such an observation.

Mr. BIDDER said the Vice-Warden made the order, with costs.

The resolution appointing the members of the committee was put, and carried.

Mr. BIDDER said he was very sorry to have to say many things unpleasant to gentlemen present. He had forwarded a circular to the shareholders, which related that the whole control of the mine was practically in the hands of Mr. Henry Chapman, the London manager; that there was no managing committee; no audit or check upon the accounts, except at the meetings, at which it was almost impossible to apply any efficient examination. The only occasions on which the shareholders have, even nominally, any voice in the conduct of the business are the general meetings, which occur about three times a year. These opportunities, however, were of little practical value, for the following reasons:—The shareholders were scattered all over the kingdom, consequently the attendance was usually small. Mr. Chapman had, moreover, occasionally adopted a plan of collecting proxies by circular, which enabled him to defeat any proposals of which he might disapprove; he had also most unjustifiably assumed the right to establish a rule which effectively hindered any independent shareholder who might desire to do the same—he had instructed the secretary not to permit shareholders to inspect the books of the company containing the addresses of their fellow-shareholders, thus rendering co-operation almost impossible. This system of despotic management appeared to him to be most unsatisfactory in principle, and not less so in practice. For illustration, he might refer to a very recent matter, the recent proposal to purchase the adjoining ground for 5000l. It would be remembered that with the notice convening the meeting last October, the shareholders were startled by an announcement from Mr. Chapman that the shaft had reached the boundary, and that he had entered into a provisional agreement with the holder of the adjoining sett that the company should buy it for 5000l. Mr. Chapman also gave notice of a special meeting to adopt this agreement, and invited proxies in support of it. At the meeting, although some shareholders, while admitting the desirability of obtaining

the ground, objected to the enormous price, they were largely outvoted by Mr. Chapman and his friends and proxies. The arrangement would doubtless have been confirmed had not he (Mr. Bidder) and some other shareholders who felt that it was an extremely improvident one, and knew that it could not legally be carried out if any shareholder objected, entered formal protests which compelled its abandonment. At the second special meeting he (Mr. Bidder) proposed that a committee of shareholders should be appointed to enquire into and advise the company upon the question, but, although supported by all the independent shareholders present, his motion was defeated by the votes of Mr. Chapman, Messrs. Bartlett and Chapman, the secretary, and proxies held by Mr. Chapman. Until the notice to the shareholders that the shaft was getting near the boundary, he had, however, taken the trouble to ascertain the facts, and found that the almost certainty of the shaft crossing the boundary at no great depth must have been apparent to the managers, if they paid the commonest attention to the matter, many months before. The shaft started only 14 fms. from the boundary, and has dipped continually ever since. Why were the shareholders never informed of this? The vendor of the adjoining sett, to whom the shareholders were to pay 5000l., was, in fact, only the lessee under a mining lease for 21 years, of which 10 had expired, subject to the usual royalties, which, of course, the shareholders would have had to pay by sides. Why was not this communicated to the shareholders? This adjoining sett was the same as that formerly known by the name of "Lovell Consols," a mine as a failure in the end of 1872, and the lease, with the plant and machinery, was put up to auction in March, 1873, and bought by a Mr. Edmunds for 200l. At that time the Lovell shaft was within 8 fms. of the boundary, and dipping rapidly to been got for such a trifle, instead of doing nothing until the last moment, and then proposing to buy it, minus the machinery, for 5000l. He did not know who were the persons at present interested in this lease, but it was manifest that some of them would have got an enormous profit at the shareholders' expense. He also found, on examining the cost book, that the expenses of management were extravagant. They were, per month of four weeks, 332l. 11s. He contrasted with this the cost of management of an adjoining mine employing about the same number of men per annum, or nearly 1s. dividend per share. Under these circumstances it appeared to him full time that a change was made, and that the shareholders should take the matter into their own hands. Those were the allegations he had made in his circular, and he did not know that he need add anything, except it be to mention that at this present moment Messrs. Chapman and Lawrence were hawking the company. It would be of considerable value to the Lovell, and yet their London manager was endeavouring to constitute it as a separate mine. Having made these charges against Mr. Chapman, it was only fair that he should have an opportunity of answering them, which he (Mr. Bidder) invited him now to do, and promised him a fair hearing.

Mr. CHAPMAN said that as regarded the application for a list of shareholders, if one shareholder had a right to have a list each might require a copy, and the whole time of the secretary would be thus employed. The Act of Parliament says a shareholder could claim one, but the Vice-Warden had a discretionary power, if it were not for the benefit of the company he had power to refuse it. Mr. Bidder asked why this ground in question had not been secured for the company. How could it be secured if it were illegal for him to have done so?

Mr. BIDDER then moved that the shareholders, having lost confidence in the management, Mr. H. Chapman be dismissed from the office of London manager. Mr. GRIFFIN seconded the proposition.

Mr. BERRY said if such an arbitrary proceeding be taken it would not be for the interest of the mine, and Mr. Chapman would stand on his legal rights, of which he (Mr. BERRY) was happy to say Mr. Bidder could not deprive him.

Mr. BIDDER said if Mr. Chapman would now resign he (Mr. Bidder) had no desire to be unnecessarily harsh, and would withdraw his motion.

Mr. Chapman declining to resign, the motion was put and carried.

A resolution was also passed dismissing Mr. Lawrence from the office of secretary. Mr. BIDDER said he would not make any motion with reference to Captain Nancarrow as he was not present, although he should move that the committee make such other changes in the local management as they may think proper, so as to secure the effective development of the mine.—Mr. CHURCH seconded the proposition, which was put and carried.

It was also resolved that Messrs. Chapman and Lawrence do hand over to Mr. Drew, on behalf of the company, all books, papers, and leases of the company.

Mr. Granville Sharpe was appointed secretary, at a salary of six guineas per month, and an allowance of one guinea per month to cover all postage and other expenses.

Mr. BIDDER added that Mr. Sharp was entirely unknown to him, except that he had become known to him in mining business. Mr. Sharp was an extremely able, energetic secretary, and his account was honestly and straightforwardly prepared. The effect would be to reduce the expenses from fifteen to seven guineas per month.

It was also resolved that Mr. Lawrence should transfer into the name of Mr. Sharp all shares held on behalf of the company. The meeting was then adjourned till Feb. 13.

PORT PHILLIP AND COLONIAL GOLD MINING COMPANY.

An ordinary general meeting of shareholders was held at the City Terminus Hotel, on Thursday.—Mr. HENRY MOOR in the chair.

Mr. J. W. PURCHASE (the secretary) read the notice convening the meeting.

The report of the directors appeared in last week's Journal.

The CHAIRMAN said he had but little information to add to that contained in the report. With regard, however, to the subject of firewood, he might mention that by a letter from Mr. Bland, received since the report was published, they learned that in consequence of having a much larger stock on hand than at the end of the past year, they would not require nearly so much. The amount paid last year was 8904l., but this year they commenced with a good stock, while their consumption of firewood and mine timber would be less this year. The calculation was 4573l., a difference of about 4000l. in that item alone, equal to a dividend of 6d. per share. Upon this point Mr. Bland wrote:—

"This year we commence with a good stock, and our consumption both of firewood and mine timber, will be less. We are not using the south shaft, all the hauling being done at the north shaft; there is also less mine timber and firewood used underground, the stops now working being more solid, and requiring less support than formerly."

The next matter in the report which called for observation was the statement in the report of the directors that in the month of December last Mr. A. B. Tietkens, who had acted as one of the auditors of this company for several years, sent in his resignation of the office on the ground of ill health, and the board, under the powers vested in them, nominated Mr. Henry Ransford as an auditor in conjunction with the remaining auditor, Mr. W. S. Sutton. Since the report was issued Mr. Sutton had signified his intention of not offering himself again, and Mr. G. Molinex had signified his intention of becoming a candidate for the office thus rendered vacant. He now came to that which was the great point of interest to them all—as to the future prosperity of the mine. He held in his hand a report by Mr. John Lewis, who describes himself as having had an experience of nearly 17 years as a mining engineer in Victoria, and the manager of the New North Clunes Company, and being totally unconnected with the Port Phillip Company Mr. Lewis was entitled to great weight. Mr. Lewis said there was great mismanagement in the mine many years since by discontinuing the sinking of the north shaft. Mr. Lewis adds:—

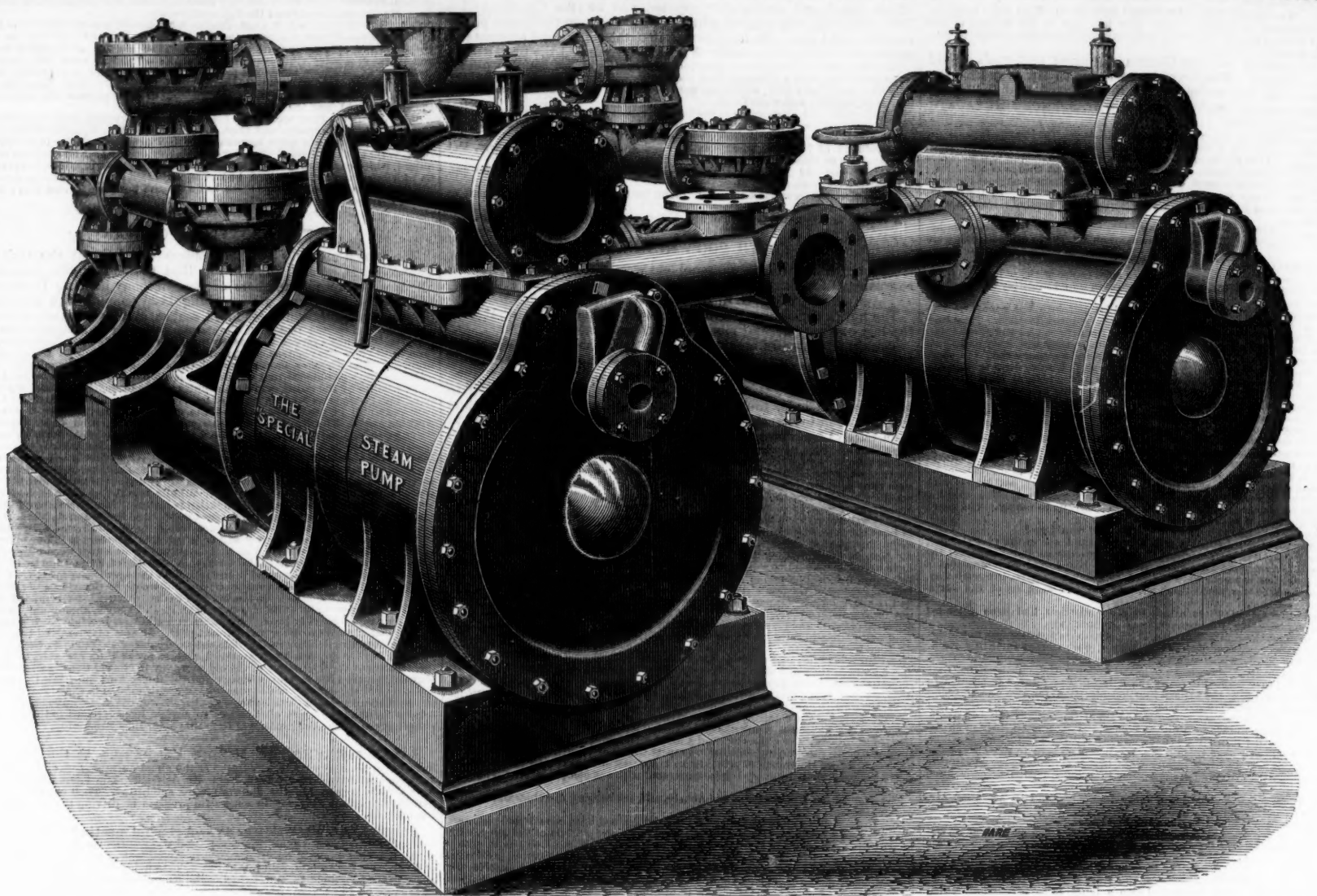
"The proper time to have done this work would have been when the great bulk of quartz at the upper levels was available, and were being raised at the south shaft, thus leaving the operations of sinking, driving cross cuts, and opening out the mine to be exclusively conducted at the north shaft; this opportunity, unfortunately, was not taken advantage of at that time, and the remunerative quartz at the south end of the mine were mostly taken out of the upper levels, necessitating the operations to be conducted further north, and thus making the north shaft the principal hauling shaft for the quartz. There being but one engine at this shaft, and its foundations under the pumping gear being defective, the sinking could not be continued without great risk, and it was also found impossible with the same engine to carry on the two operations of raising quartz and sinking the shaft at one time. I am aware this was attempted, but with indifferent success, and it was found absolutely necessary to erect a separate pumping engine, since which time the sinking has been continued without any delays. Another important consideration in favour of continuing the sinking years since is the time necessary for prosecuting the sinking between the different levels, and driving the various cross-cuts after the shaft is down to the required depth, necessitating in the case of your mine nearly two years for each level. Having in view the probability of our or more levels being unremunerative, the shaft being kept well in advance of the workings becomes of the greatest importance to the value of any mine."

Mr. Lewis says that the blame—if blame it be—was not attributable to the present manager, who was conducting the operations judiciously and successfully. Mr. Lewis adds that:—

"The immense quantities of quartz worked remuneratively in the upper levels of your mine, also the quartz at present in sight, would favour the opinion that the mine was inexhaustible. Repeated samples, however, from the various lodes (with the exception of the western, which is the principal payable lode at present) at the lower levels, undoubtedly prove the quality of the quartz to be considerably less payable than they were nearer the surface, leading to the supposition that a poorer belt of country was at the present time being worked, which may be expected to be followed by a more payable one at a greater depth. This has often occurred in other districts in Victoria, and I see no reason why it should not take place at your mine."

Those (continued the Chairman) were strong terms—hence he pre- faced his observations that this gentleman had had considerable experience as a mining engineer, and he hoped what he said would prove to be true. He (the Chairman) did not know that he had anything else to say. It was not his custom to occupy their time with any long-winded speech; but he should be glad to answer any question, or if he could not some other gentleman of the board would. He might add that the railway, which had been in course of construction for a long time, from Ballarat to Clunes, had been finished,

A PAIR OF THE "SPECIAL" DIRECT-ACTING STEAM PUMPING ENGINES.



A PAIR OF THE "SPECIAL" DIRECT-ACTING STEAM PUMPING-ENGINES.

The accompanying illustration shows a pair of the "Special" Steam Pumping-Engines now in course of manufacture by Messrs. Tangye Brothers and Holman, of London, for Messrs. Lamb and Moore, of Newtown and Meadows Collieries, near Wigan, being duplicates of many others made by the firm. The steam-cylinders are 30 in. diameter, and the water-cylinder 10 in. diameter, by 4 ft. stroke. The engines will be capable of raising 40,000 gallons per hour 430 ft. high in one direct lift. It is of the first importance that all mine draining machinery shall be as simple and durable as it can be made, and that it shall be readily fixed and easily removed from one locality to another. This is particularly desirable for iron, copper, tin, lead, and other mines, which are of a fluctuating character, and

even for coal mines, where the operations are more permanent and extensive, every improved appliance for draining that effects an economy in plant and labour is manifestly to the advantage of all proprietary interests. The development of the system of draining mines by means of direct-acting steam-pumps has been carried out by Messrs. Tangye Brothers and Holman with characteristic energy and success, and during the last few months an important scientific advance has been achieved, analogous to the great improvement in Newcomen's engine effected by Watt when he applied his famous "condenser." It is well-known that in the Cornish pumping-engine two additional pumps are employed in the system of condensing—the air-pump and cold (injection) water-pump, except in such cases where the mine water pumped up to the surface is run into a cistern, and from thence direct into the exhaust steam receiver.

The engines illustrated will be fitted with a pair of Holman's patent self-acting exhaust steam condensers. These condensers are simply fitted in the suction-pipe of the double-action pump (with

which the workings are effectually drained) by placing the engine down in the mine. The steam for working the engine may be generated at the surface and taken down the shaft, and there effects its duty first by exerting its force on the piston in the usual way; and then, through the rapid condensation of the steam effected by the new condenser, so removes the load from the exhaust side of the piston as to contribute materially to the power required to raise the column of water in one continuous stream to the surface. This new feature will greatly commend the direct-acting system to the whole mining community; and since the great cost of long exhaust pipes is now avoided, and all inconvenience and injury caused by the escape of exhaust steam in underground workings is entirely prevented, there is hardly a doubt that the system inaugurated by Messrs. Tangye seven years ago, and which has so developed under their enterprising spirit, will be carried to an extent not hitherto contemplated. We hope to furnish a further report after these engines are set to work.

FOREIGN MINING AND METALLURGY.

The state of the French iron trade is far from being prosperous; at the same time, some small orders have slightly relieved the metallurgical horizon. The groups of the Centre and of Champagne are at present the most favoured; a certain number of orders have enabled their works to go on with a tolerable amount of activity. In Champagne a lot of 50 tons of grey refining pig has sold at 54. 4s. per ton at the works. Some descriptions of coke-made iron have been dealt in at 84. 16s. per ton. As regards plates it may be observed that they are in little request. In the Nord several forges have reduced the price of their iron to 84. per ton for transactions with deliveries at a future date, and 84. 8s. for current affairs. Heavy plates are quoted at 117. per ton. At St. Dizier pig for recasting has been disposed of with difficulty. No. 1 is quoted at 54. and No. 3 at 44. 8s. per ton. White refining pig is sold at 34. 1s. 8d. per ton in the case of transactions with deliveries at a future date, while disposable has brought 34. 4s. per ton. The Paris iron trade has continued quiet. No. 2 rolled iron has brought 94. 8s. per ton; special first-class iron 104. 4s. per ton; and large puddled plates for boilers 144. 8s. per ton.

The Paris copper market has continued weak, with a comparative absence of business. Upon the German copper markets business has ruled quiet, and orders have been restricted to the immediate requirements of consumption. The Rotterdam tin market has ruled quiet. Billiton has made 55 fls., and Banca 57 fls. The average price of Banca at a recent public sale of the Dutch Society of Commerce was 56½ fls. The Paris tin market has been slightly firmer. In Germany quotations for tin have been almost nominal. Lead has only realised comparatively nominal prices at Paris. The German lead market has ruled rather weak. Zinc has been pretty well supported at Paris. At Marseilles rolled Vieille-Montagne zinc has been quoted at 324. per ton. The German zinc markets have continued quiet.

The condition of the Belgian coal trade is not very favourable just at present. Important stocks of industrial descriptions of coal are accumulating, in consequence of the generally inactive condition of Belgian industries. The demand for domestic consumption has not, also, attained the full importance desired. Some uneasiness begins to be displayed with reference to the season which is about to commence, and Belgian coalowners are following with marked attention the movements of the English markets, as well as those of the Ruhr basin and the North of France. Belgian coalowners are offering a stout resistance to any reduction in prices; but, on the other hand, the requirements of purchasers are neither pressing nor important. Official returns have just appeared illustrating the exports of Belgian coal into France in 1874 via the Zambre, the canal from Mons to Condé and the Esquellines, Hautmont, Quiesrain, Tournai, and Mouscroix Railways. The exports of last year show a falling off 342,900 tons. The exports of coke also declined 70,367 tons. The movement of Belgian coal into France by railway appears to increase at the expense of the corresponding movement by water. The use of metallic cables is stated to be increasing in Belgian coal mines.

A more or less decided fall has been noted in coal upon the French markets. The demand has fallen off, and coalowners are proposing more and more concessions to the French ironworks, which, unfortunately for themselves, do not require much coal just at present. The

sugarworks are on the point of closing their operations for the season, so that coalowners have little to hope for in that respect. The winter having again become mild, domestic consumption has also been rather reduced. The best qualities of house coal have been selling at Paris at 56s. 6d. per ton delivered. In the Nord all-coming coal for rolling mills has been selling at 12s. 10d. per ton; the corresponding price in the Nord has been 14s. 6d. per ton. Unwashed coke has been quoted at 14. 1s. 8d. per ton in the Loire, and 14. per ton in the Nord.

The last few days cannot be said to have brought with them any material improvement for Belgian metallurgical industry. The depression which has been noted for some time past is still continued, and nothing indicates at present the commencement of a revival in affairs. This revival will, however, come in time, all past experience having shown that to periods of depression times of industrial activity generally succeed with remarkable regularity. The great question which Belgian industrialists have to consider is how long they will have to wait. This is a question which no one can answer with any certainty, although some persons profess confidence in the final result of the year which has just commenced. For some time purchases have been made very sparingly, but it is certain, nevertheless, that considerable requirements exist, and that they will make themselves felt in a future which cannot be very remote. Meanwhile, there are some rumours of enforced idleness; the province of Hainaut appears in this respect to be more severely tried than that of Liège. The industrial bourse of Liège is in such a flourishing condition from a pecuniary point of view that it has been resolved to reduce the subscriptions of the members as well as to suppress the entrance fee. When any improvement takes place in the tone of business this bourse may be expected to exert a favourable influence at its weekly meetings upon the industry of the province of Liège. A contract for Bessemer steel rails has just been secured by MM. Rossius, Pastor, and Co., of Strasburg. The amount of the contract thus secured was 35,130 tons, and MM. Rossius, Pastor, and Co. obtained the contract at 124. 11s. per ton, delivered at Strasburg. This was a lower price than that at which some German firms and companies offered to undertake the contract. A contract for puddled steel rails was taken by MM. Falkenroth, Koehler, and Co., of Haspe, at 114. 6s. per ton, delivered free at Wissembourg. M. Emile Durr has published an album containing a complete collection of all the various descriptions of iron produced at Seraing, Sclessin, Couillet, Marchienne, La Louvière, Clabecq, Acoz, &c. M. Durr proposes to distribute his work abroad—even in Japan and the United States—as to increase, if possible, the business connection of the Belgian works. The Martin Steelworks Company has commenced legal proceedings against the Naval and Railway Forges and Steelworks Company for an alleged infringement of patent in regard to furnaces.

During the first eleven months of 1874 the exports of iron of various descriptions from France exhibited a reduction of 17 per cent. as compared with the corresponding period of 1873. The month of December happily counterbalanced to some extent this state of things, and slightly improved the general condition of affairs. The general result of the past year was that the whole of the exports of iron from France in that period were 11 per cent. below the corresponding total for 1873. It is to be hoped, in the interest of French ironmasters, that the salutary influence of December, 1874, will continue to make itself felt in 1875.

General Romanoffski, in a sitting of the Russian Technical Society

at St. Petersburg, recently gave some interesting information respecting the coal fields of the Sir Darya country. Coal abounds in the hills, but mostly occurs in nests containing comparatively small quantities of the valuable mineral. Of large coal fields but few have hitherto been discovered. The most extensive are those of Kokine Sai, near Chodshent, containing 19,000,000 pud at the lowest estimate. Next to them rank the Tatarinoff Mines, from which 300,000 pud of the best coal have been already taken, and the annual output of which averages 70,000 pud. Lead, salt, and other minerals have likewise been discovered, and promise a flourishing trade.

A NEW "RUSH" IN NEVADA.—The New York papers report that extraordinary excitement exists in California in consequence of the discovery of a mountain of silver ore in Nevada. It is believed that the ore will yield from \$600 to \$1200 per ton. It is estimated that there is \$43,000,000 worth of ore in sight in one level of the mountain, and in California the estimate is still higher, ranging from \$50,000,000 to \$150,000,000. Everyone in California is in the flash of speculation, from millionaires to bootblacks, not even excepting the ladies, who in carriages visit the bankers' offices with exhausting regularity. Everybody is a bull or a bear. Never in the records of stock speculation in San Francisco has there been anything like the amount of business. One of the results of this is that every worthless mine has been brought forward by stock gamblers, and the air is full of rumours of fabulous fortunes. One clothing firm is said to have received the resignations of all but one of their employees on New Year's day. They have all retired as capitalists. Every one who can has invested, the press cautioning the poorer speculators—clerks, teachers, &c.—not to be led away by the excitement.

PUDDLING.—Sir J. G. N. ALLYNE, of Butterley Ironworks, Alfreton, has patented an invention which relates to puddling-furnaces of the rotating basin kind, and rabbles for such furnaces. The furnaces are provided with four regenerative chambers, two for gas and two for air, so that while the products of combustion pass from the furnace through a pair of the chambers, heating them, the gas and air passed to the furnace through another pair, becoming heated so as to produce a flame when they mingle at the furnace throat. The flame may enter at one throat, and issue by a throat on the opposite side, or the two throats may be on one side, so that the flame wheels round the furnace. The rabble used for basin furnaces, whether heated on the regenerative gas principle or otherwise, consist of iron bars or tubes bent to loop or to crank form, and made to revolve on a horizontal axis, so that their looped or cranked parts are caused to sweep through the molten metal in the basin. When tubes are used, water is made to circulate through them to keep them cool.

CHARCOAL FURNACES.—Mr. F. WIRTH (for Mr. E. LANGEN, of Cologne) has patented an invention for dispensing with the ordinary lower sliding cover of charcoal furnaces, and fastening the cooling tubes by means of bolts into suitable bearers. These bearers are screwed into lateral bearers, which are supported by the pillars and brickwork of the furnace. Below these bearers there is placed a moveable plate, provided with two slits, suspended by means of lateral pieces on anti-friction rollers. The rollers bear on projecting ribs of the before-mentioned lateral bearers. The lateral pieces suspending the moveable plates are connected by rods to a small hydraulic engine, which gives movement to the lateral pieces and the plate, the rollers reducing the friction to a minimum.

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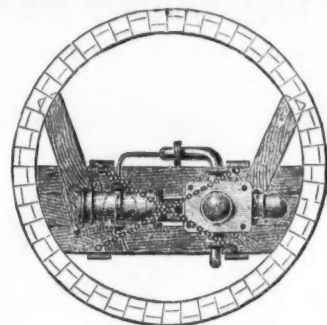
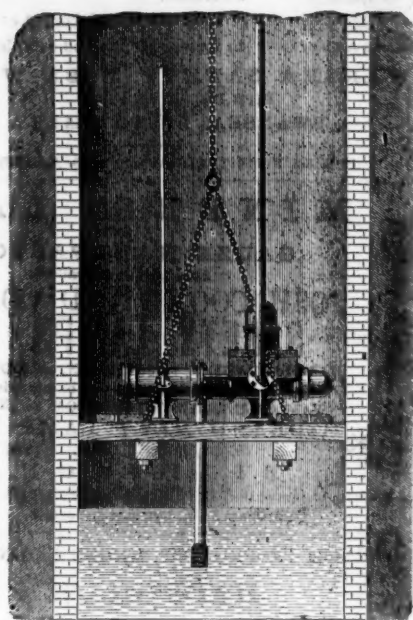
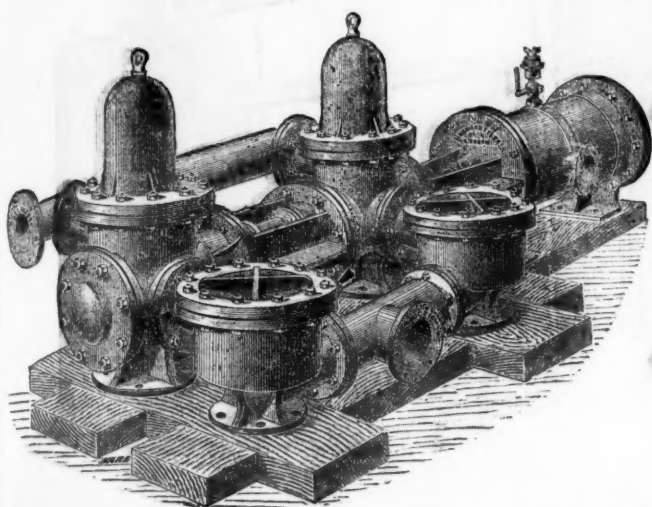
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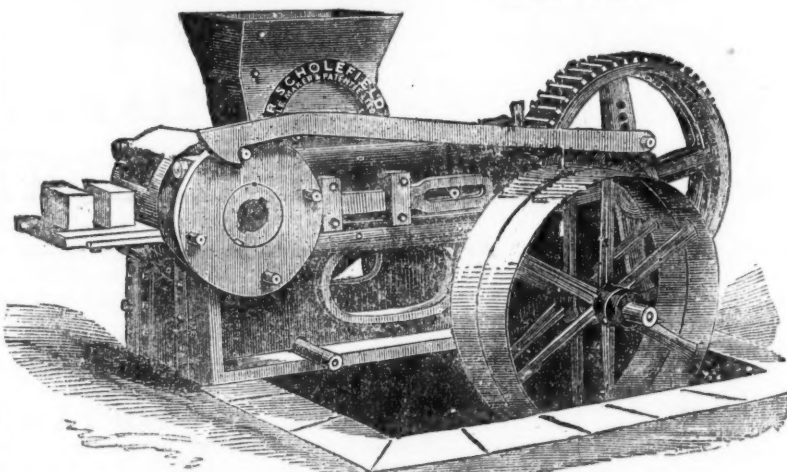
HYDRAULIC MINING—"GOLD RUN."

At the village of Gold Run I met Col. Ludlum, the superintendent of the Cedar Creek Mining Company, who drove me to Dutch Flat, and took me over the properties belonging to Cedar Creek. This is a large and very valuable holding, suffering somewhat from the fact that its property is divided into several sections, and is, therefore, more difficult to work than it would be if lying in a compact body. The property is, however, so extensive that it may be treated as two or three different mines. The company owns about 300 acres, and is adding to this area. In fact, owing to the great water supply owned by the company, it is able to make almost its own terms in regard to purchases from the holders of the small lots into which the gravel is divided, as these cannot work without systematic and well-laid-out tunnels, which would not pay to drive to wash small sections of gravel. Hydraulic mines can only be worked on a large scale, and the Cedar Creek, with its already large extent of property and its powerful water supply, has a practical monopoly of the Dutch Flat gravel region. This region is separated from the Gold Run region only by the Central Pacific Railway. This, however, is a wider and more marked division than would be supposed for the railway runs upon the original level of the ground. This has been, as I have already explained, washed away on either side to a depth of from 100 to 200 ft., and the railway is self-defence has been obliged to hold the land for some distance on either side of the track, as otherwise its safety would have been seriously imperilled. The centre of the gravel stream passes under the line almost at right angles. Cedar Creek owns some property upon the Gold Run side of the railway, and this will eventually be worked by a prolongation of the tunnel, which will open the Gold Run Mining Company's property. As, however, I have described the general features of the property already, I need not advert to it further. Their principal and at present most valuable holding is close to the town of Dutch Flat. Here they have recently added a number of small holdings to which they previously held, and have now a consolidated property, including within it the blue lead, at an important point where two forks of the old river ran together. Here they were, at the time of my visit at work, for even in the dry season they have a sufficient head of water to work one of the largest jets. In the wet season their streams will provide 7000 in. of water for 10 hours a day, and operations were in course to enlarge the reservoirs, so as to provide a supply of 300 in. during the dry season. The great hydraulic was at work with a tremendous pressure, the cisterns being over 400 feet above the point of issue: 1000 in. of water were rushing through a nozzle of 4 in. diameter, with a power and force which was astonishing. The water resembled a solid bar rather than a liquid, and the sensation upon putting one's finger against it was that of touching a rapidly moving column of shot rather than water. Even more curious was it to see the stream of water that rushed down from the face of the gravel; it seemed impossible that all this torrent could have emerged through the small orifices. One man sufficed to direct the jet, which was placed about 20 yards from the gravel upon which the water was playing. Tremendous was the force with which the water struck the gravel, with a roar that rendered speaking, or rather hearing, impossible. Great boulders of tons in weight were turned over and over, and rolled here and there at the pleasure of the operator; smaller rocks were sent flying in the air, and the tough clay was broken up, and the gravel mass seemed to melt down at the touch of the water. Upon a high bank close by were erected some strong shears with a crane, and with these the boulders too large to run down the sluices were lifted up and taken out of the way; this being done, of course, when the jet was turned in another direction. In mines, indeed, where water is short the boulders are generally taken out of the way by means of cranes during the daytime, and the jets are turned out at night to the light of huge log fires. In other places where the water is hired from water companies at so much per inch for the day of ten hours the boulders are removed in the early morning and late evening, before and after the "hydraulic." The water and gravel rushed away down channels in the bed-rock to the mouth of the tunnel, by which it was to pass down to Bear River. Fortunately for the company, this tunnel is not a very long one, for the centre of the old bed is not very far distant from the ravine, consequently a tunnel of some 300 to 400 ft. was sufficient. I went down near to its mouth, and here the stream rushed out with great force, and then along some hundred yards of sluices down into the river bed. Looking at this rush of muddy water, carrying before it the rumbling blocks of quartz and the smaller gravel, one understands how large a proportion of the gold must be lost. Anything like what one may call a bit of gold would, of course, fall to the bottom, and be safely caught between the interstices of the blocks of wood which are laid on the bed of the sluice. But the great proportion of the gold is of infinite fineness. If a piece of the gold leaf used by gliders were taken and broken up into an impalpable dust which the slightest breath would disperse through the air an idea may be formed of its fineness, and it will at once be seen that such an impalpable dust as this has but slight chance of finding a settlement in this stream, which is strong and rapid enough to sweep a child from his feet, and in which even a man would have to stand with care to ensure his footing.

I do not think that as yet this branch of "hydraulic" has at all reached perfection, or that anything like as large a proportion of the gold is saved at present as will be recovered when more careful and scientific appliances are brought to bear upon it. This tunnel is called the Yankee Tunnel, and a branch of it will eventually be extended in the direction of the railway to a claim called the Deep Shaft, owned by the company. The intermediate claims are now being purchased by Cedar Creek, and as they all lie upon the course of the blue lead this will become one of the most valuable portions of the property. Knowing what immense profits have been made by drifting upon the blue lead, there can be no question that the Cedar Creek Company will, when their tunnels are sufficiently extended, and their reservoirs sufficiently enlarged to allow them to work all the year, have every prospect of a remarkable success. They have enough ground to last them for the best part of half a century. The original fault in the composition of Cedar

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Total cost of making 10,000 pressed bricks

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Creek Company, as in Gold Run, and as in many other hydraulic undertakings, was that they started with insufficient working capital. Modern hydraulic mining, with its heavy tunnels and expensive apparatus, can only be successfully carried out with ample capital. Almost all these companies were started in ignorance of the extent and nature of the work which would be required to put them into paying condition, and most of them have paid for their error by hard times, no dividends, depreciated shares, and by finally borrowing in debentures the money to do the work which should have been done by the original working capital. Some of the mines have, like Gold Run and Cedar Creek, now turned the corner, and their way appears clear and bright before them; others will fail because they began in the wrong way, their shareholders lost heart, and sufficient capital could not be raised. Those who in the future may venture upon hydraulic mining in California should profit by the errors of the past, and see that an ample working capital is provided, in order that the work may eventually be carried out so as to ensure success.—Correspondent of Standard.

QUICKSILVER MINING IN MEXICO.—We have received, through the kindness of the Mexican Consul in this city, the following items relative to quicksilver mining in Mexico from Antonio del Castillo, sub-director of the School of Mines in Mexico. Since the epoch of scarcity of quicksilver, preceding the discovery of Guadalupe and New Almaden in 1840 and 1848 respectively, this article had not reached its present price of \$200 per quintal in Mexico. Suspension of many mills throughout the country is the natural consequence. New and old deposits of mercury are, however, being brought into notice. Near San Felipe, State of Guasajuato, various deposits are being worked, whose yield, however, cannot

R. S. begs to call the attention of all Colliery Owners in particular to his PATENT SEMI-DRY BRICK MACHINE, and the economical method of making bricks by his patent machinery from the refuse that is taken from the pits during the process of coal-getting, which, instead of storing at the pit's mouth (and making acres of valuable land useless), is at once made into bricks, at a very small cost, by R. S.'s Patent Brick-making Machinery. If the material is got from the pit hill, the following is about the cost of

supply the demand from the State. Near Guadalupe and Charcos, State of San Luis Potosi, some veins are yielding quicksilver, though not enough for the same State. In Zacatecas, where there exists great demand for quicksilver, one vein has been discovered near Sainetito, though not indicating great richness. In Durango there are extensive deposits, which have been abandoned for upwards of two years, on account of the company's embarrassment and political difficulties. Some poor miners still work around these old workings, and obtain a considerable amount of quicksilver, which is used by the mines of Sinaloa. Rich specimens come in daily from various sections of unexplored country, promising vast discoveries. At forty leagues from this city, in Guerrero, immense deposits have just been discovered bearing two minerals—one containing mercury, sulphur, and antimony, and the other oxide of antimony, mercury, and silicate, yielding 10 to 14 per cent. of quicksilver. Furnaces are needed, the present earthen vases being wholly insufficient. There is an old mine near Pregones, between Tasco and Zacualpan, 50 leagues from this capital, which since the time of the Spaniards has yielded rich cinnabar. Ore 4 in. wide yields 70 per cent. in clay containing 10 to 20 per cent., in a well-defined ledge connected with a silver-bearing ledge. By operating the 50 known deposits Mexico could produce 2,000,000 to 2,500,000 lbs. required for home consumption, and probably have some over for export.—Mining and Scientific Press, San Francisco, Jan. 18.

PICKS.—Mr. M. DODDS, of Bedburn, has patented an invention which mainly consists in this:—The pick head is made of iron, somewhat shorter than the pick head is intended to be, the deficient portions at each extremity (not pointed) being supplied by steel points welded on to the body of the pick head, constructed as above stated.

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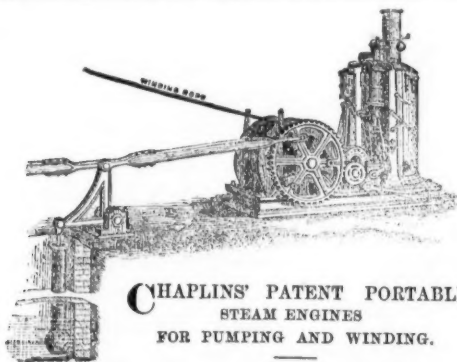
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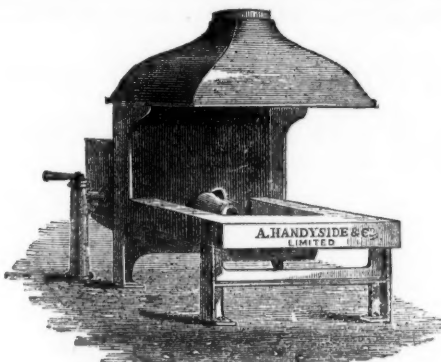
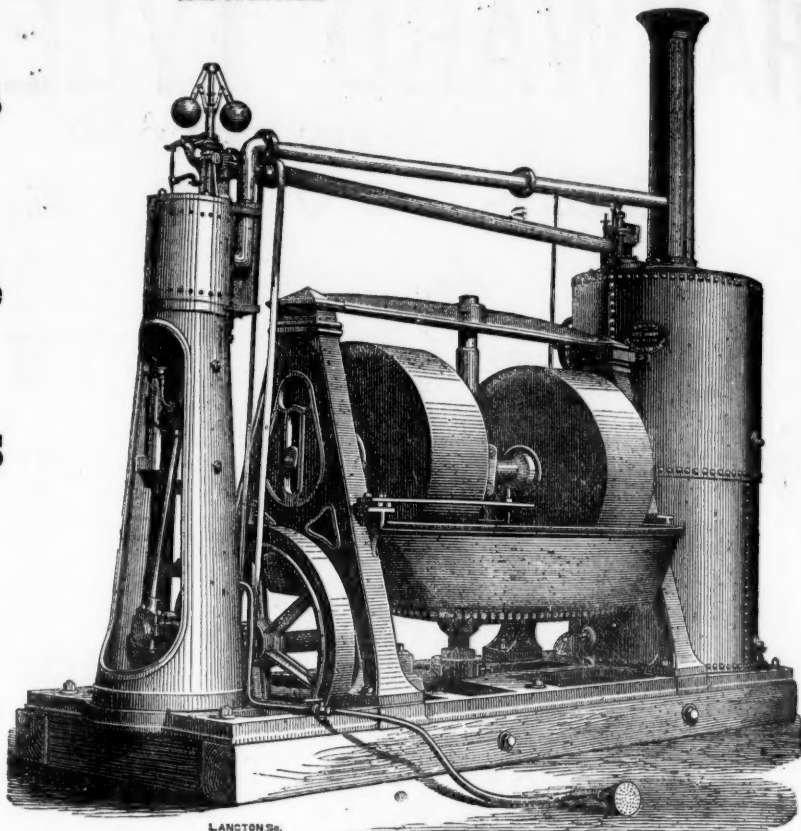
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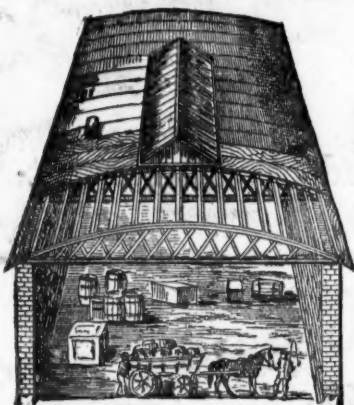
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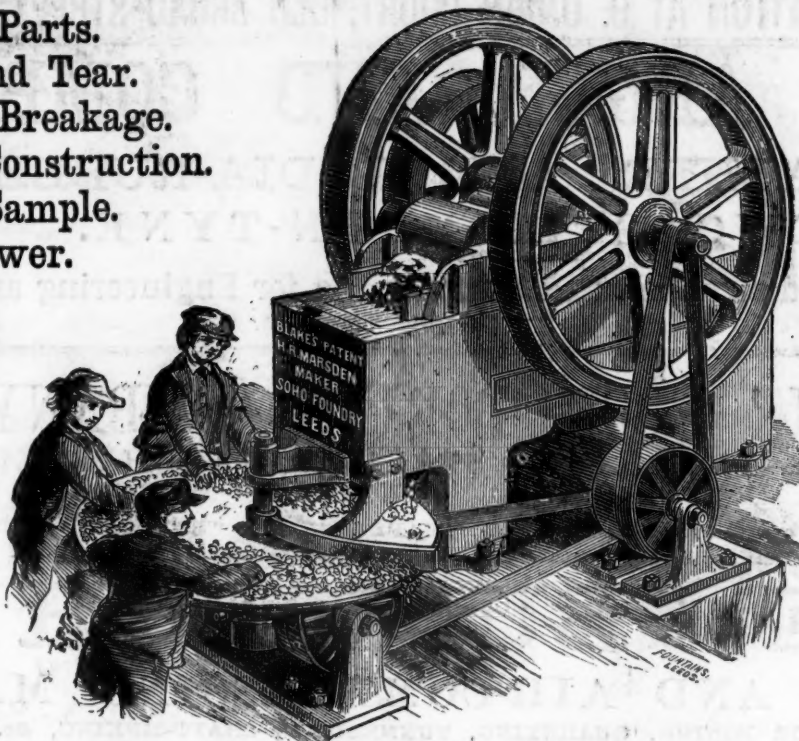
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